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WILLIAM PEARCE ;  
FATHER OF ALBERTA IRRIGATION

by

E. ALYN MITCHNER

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES  
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE  
OF MASTER OF ARTS

DEPARTMENT OF HISTORY

EDMONTON, ALBERTA

April 1, 1966



UNIVERSITY OF ALBERTA  
FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and  
recommend to the Faculty of Graduate Studies for acceptance,  
a thesis entitled "WILLIAM PEARCE: FATHER OF ALBERTA IRRIGATION"  
submitted by E. Alyn Mitchner in partial fulfillment of the  
requirements for the degree of Master of Arts.



## ABSTRACT

The purpose of this study is to examine the role played by William Pearce (1848-1930), in promoting irrigation farming techniques in western Canada. In 1885, the Department of the Interior appointed Pearce to the office of Superintendent of Mines for the Northwest Territories making him the chief Federal Government officer between Winnipeg and the eastern foothills of the Rocky Mountains, and the International Boundary and the 56th parallel. He promoted irrigation in the far West for the purpose of reclaiming arid lands in the region. He hoped that by making drought stricken areas productive, he would encourage further settlement in the Canadian prairies.

He officially drew the attention of the Federal Government to the need for irrigation in his annual report to the Minister of the Interior in 1885. Frustrated by the seeming indifference of the Federal Government to his proposals, Pearce took action to persuade and educate the westerners of the benefits of irrigation farming methods. His promotion of the Calgary Irrigation Company in 1893 was an effort to visibly demonstrate the superior crop yields promised by irrigation.

When the Government decided to recognize the need for irrigation in the far West, Pearce was asked to draft regulations governing the initial and subsequent use of all western waters. He



embodied his ideas on irrigation in the Northwest Irrigation Act of 1894. This act provided the framework for the future development of irrigation projects in Canada.

Pearce was also primarily responsible for the decision of the Directors of the Canadian Pacific Railway to embark on their comprehensive irrigation projects east of Calgary. He was the one who brought to their attention the possibility of receiving the remainder of their land grant en bloc, for the purpose of constructing irrigation works in southern Alberta. Pearce expected to become involved with the administration of the Railway's irrigation project when he left the Government's service to become an executive assistant to the Department of Natural Resources of the C.P.R. However, he was transferred to other duties when it was found that J. S. Dennis had the development of the project well in hand.

As a result of a township by township survey of the western plains (1910-1915), ordered by the Railway for the purpose of exploring future branch line locations, Pearce devised the plans for the Northwestern Saskatchewan Irrigation Scheme, known as the William Pearce Project. He planned to harness the excess water from all the rivers of the eastern watershed of the Rockies, and to divert this water onto the western prairie between Hanna and Saskatoon. Although his plans for the 15 million acre project were found to be physically possible, the cost of \$105 million could not be met at that time. In 1966, the Provincial Government of Alberta has announced plans for the construction of a modified water conservation plan along lines drawn by Pearce in the 1920's.



## ACKNOWLEDGEMENTS

The author wishes to express his sincere appreciation to Dr. L. H. Thomas, supervisor of this project, for his guidance and assistance during the preparation of this thesis. He also wishes to express his thanks to: Miss D. I. Hamilton of the University of Alberta Archives for her assistance and co-operation in the use of the William Pearce Papers; to Mr. Hugh A. Dempsey of the Glenbow Foundation Archives, Calgary, for permitting access to the Jacobson Papers and the Foundation's documents on irrigation in Alberta; to Mr. F. L. Grindley, Director of the Alberta Water Resources Board, who kindly made available the files relating to the William Pearce Project. He also wishes to express his gratitude to Mrs. Pat Squair who cheerfully undertook the work of typing the thesis manuscript.



## ABBREVIATIONS

A.W.R.B.: Alberta Water Resources Board, File No. 2322,  
Terrace Building, Edmonton, Alberta.

G.F.A.: Glenbow Foundation Archives, Glenbow Foundation,  
Calgary, Alberta.

Interior Report: The Annual Reports of the Department of The Interior,  
as published in the Canada Sessional Papers.

W.P.P.: William Pearce Papers, University of Alberta Archives,  
Edmonton, Alberta.



## TABLE OF CONTENTS

	page
Abstract.....	iii
Acknowledgements.....	v
Abbreviations.....	vi
List of Maps and Pictures.....	viii
Chapter	
I. The Journey West.....	1
II. The Promotion of Irrigation.....	22
III. The Calgary Irrigation Company.....	54
IV. The Canadian Pacific Railway Irrigation Block.....	88
V. The North Saskatchewan Irrigation Project.....	112
VI. Conclusion.....	139
Bibliography.....	146
Maps.....	151



## LIST OF MAPS AND PICTURES

William Pearce.....	ix
Map I. Irrigation Plans for the Pearce Estate.....	152
Map II. The Calgary Irrigation Company.....	153
Map III. The North Saskatchewan Irrigation Project and the C.P.R. Irrigation Block.....	154





WILLIAM PEARCE

1848-1930



## CHAPTER I

### THE JOURNEY WEST

William Pearce first visited Calgary in the latter part of September 1883.<sup>1</sup> He had come from Winnipeg to investigate conditions arising from a land boom touched off by the arrival of the Canadian Pacific Railway in August. In the intervening five weeks, the railroad had brought a steady stream of settlers to the junction of the Bow and Elbow rivers, where they settled on the unsurveyed lands adjoining the river banks.

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<sup>1</sup>Unless otherwise stated, the biographical material for this work has been taken from the following sources: John Blue, A History of Alberta (Chicago: Pioneer Historical Publishing Co., 1924); B. M. Greene, Who's Who in Canada 1928-1929 (Toronto: International Press, 1929); Carl Lester, "Dominion Land Surveys," The Alberta Historical Review, II (Summer, 1963), 20-28; W. G. MacEwan, Calgary Cavalcade (Edmonton: Institute of Applied Arts, 1958); A. D. MacRae, History of the Province of Alberta (n.p.: Western Canada Publishing Company, 1912); H. J. Morgan, Men and Women of the Times (2nd ed.; Toronto, 1912); W. Stewart Wallace, The Macmillan Dictionary of Canadian Biography (3rd ed.; Toronto: The Bryant Press, 1912).

W.P.P.: A memorial from Pearce to the Governor General of Canada outlining his civil service career, June 25, 1909, File No. 30.42.; A letter to Phina Pearce containing a biographical sketch for the benefit of his family, May 20, 1909, File No. 22.41; A copy of his professional record submitted to the American Society of Irrigation Engineers, File No. 3.5; A memorial to John Hull, Secretary of the Department of the Interior, concerning superannuation, September 19, 1892, File No. 22.55; Superannuation, File No. 21.14; Pearce's travels, File No. 28; Private family correspondence, File No. 24; Career of William Pearce, File No. 21.2; A memorandum concerning career, 1909, File No. 30.42.



The Department of the Interior had deemed it advisable to send a responsible official to the rapidly growing community of five hundred when a dispute arose between the settlers and the Railway over lands the latter required for station buildings and freight yards. Pearce, an Inspector of Land Agencies and one of the two members of the Dominion Lands Board, was the official delegated to arbitrate the dispute. He was also charged with the duty of taking evidence on other land claims in the surrounding area and of reporting his findings to the Lands Board, which could accept or reject his recommendations as to the final disposition of the land.

"I was very much impressed with Calgary when I first saw it", he wrote, "and looked forward to the possibility of its being converted into a very nice city".<sup>2</sup> From the heights of the foothills above the junction of the rivers the commanding view of the Rocky Mountains to the west was so beautiful that Pearce used his authority as a member of the Lands Board to reserve many of the more scenic sites for future parkland. My desire", he wrote, "was to reserve all the islands in the river and a strip along the river, but I was unable to effect my purpose beyond the extent that has been done" due to the prior claims of the early settlers.<sup>3</sup> The beginning of many of the parks in Calgary date from this time.

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<sup>2</sup>W.P.P., "A History Regarding the Settlement of Lands in the vicinity of Calgary," File No. 19.12, p. 12. The Pearce Papers were partially catalogued by W.E. Sterling shortly after Pearce's death in 1930. As there is still a substantial amount of material unorganised it has not always been possible to cite a file number. The files are generally arranged in chronological order under subject headings, but they are incomplete pending the addition of the unfiled material. An index for the collection is available in the University of Alberta Archives.

<sup>3</sup>Ibid., p. 16.



During the long train trip across the western prairies, Pearce was struck by the arid conditions of the country. The vegetation and topography of the land were similar to that he had observed in Utah and Colorado, which he had visited in 1881. It was during his trip to the United States that his "first attention was drawn to irrigation"<sup>4</sup> as an agricultural technique to help combat rainfall deficiencies. While there, he had studied with interest the devices perfected by the Mormons on their irrigation projects for the purpose of providing their lands with an artificial supply of water.

The Mormons had settled in the region of the Great Salt Lake in 1848. Their settlement, far in advance of the American frontier, had been accompanied by radical changes in farming techniques to help overcome the lack of water on the Great Central Plains. Their initial reaction to the water shortage had been to divert water from the mountain streams onto the land. "We learned in that country the lesson of fall irrigation in the school of hard knocks",<sup>5</sup> related C. Jensen of Magrath, one of the first Mormon settlers. He continued, "It was a case of irrigate or starve."<sup>6</sup> The success of irrigation became apparent when greatly increased crop yields were produced by the intensive

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<sup>4</sup>W.P.P., "The Proposed Northwest Saskatchewan Irrigation Project and Some Reminiscences of Irrigation in Western Canada," An address to the Western Canada Irrigation Association, Medicine Hat, Alberta, August, 1919, File No. 13.A.1, p.5.

<sup>5</sup>W.P.P., "Why We Want Irrigation as an Adjunct to Dry Farming," An address by P.M. Baker, with discussion by C. Jensen, to the Western Canadian Irrigation Association, Medicine Hat, Alberta, August, 1919, p.5.

<sup>6</sup>Ibid.



cultivation given the irrigated plots. By 1858, all the available water for irrigation projects had been apportioned. Efforts were then aimed at methods of dry farming in an attempt to find means of conserving what rainfall there was for crop production. Experiments in repeated cultivation and summer fallowing were carried out in an effort to conserve the limited water supply.<sup>7</sup> When Pearce visited their colonies some thirty years later, irrigation and dry farming agricultural systems were both well advanced.

Pearce's remarks about the similarity in landform between the Canadian prairie and the Great Central Plains, and the obvious need for irrigation in the Canadian West were overheard by a fellow traveller, "a gentleman from Colorado".<sup>8</sup> They engaged in conversation and when Pearce asked him what he thought of the prairie, the gentleman replied, "it would be a good country if the Bow River were out of [on] it and not running where it is."<sup>9</sup> A lengthy discussion about the virtues and potential values of irrigation ensued. Pearce agreed with the stranger's ideas concerning irrigation and before the train arrived in Calgary he had decided that the artificial application of water to the semi-arid lands was both advisable and necessary for the economic prosperity of the region.

The semi-arid portion of the prairie region of western Canada lies on the northern fringe of the Great Central Plains region of the North American Continent. As defined in 1897 the northern limits of

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<sup>7</sup>Walter Prescott Webb, The Great Plains (Boston: Ginn & Co., 1931), pp. 319-375.

<sup>8</sup>W.P.P., "The Proposed Northwest Saskatchewan Diversion Project and Some Reminiscences of Irrigation in Western Canada," File No. 13.A.1, p.5.

<sup>9</sup>Ibid.



the region strike north-west from the point where the 102nd meridian intersects the International Boundary towards the bluffs adjoining the North Saskatchewan River in the vicinity of Battleford, and thence westerly to the eastern foothills of the Rocky Mountains, which form the western boundary. The International Boundary serves as the southernmost limit. This arid region, over 101,340 square miles,<sup>10</sup> is almost completely devoid of trees except in gullies and ravines, or along the river valleys, the rainfall being sufficient to promote only the growth of native grasses.

The region is classified as semi-arid in that the average annual rainfall is only 15 inches<sup>11</sup>--marginal for the successful production of agricultural crops. In four of the seasons that Pearce lived in the West the annual rainfall fell below 7 inches, the lowest amount recorded being 5.46 inches at Medicine Hat in 1886.<sup>12</sup> In addition, the rainfall is seldom distributed evenly throughout the region with variations in annual rainfall fluctuating between 6 and 34 inches.<sup>13</sup> Not only is the sparse rainfall variable but also cyclical in nature, with series of wet years following a series of dry years.<sup>14</sup> The arid conditions of the region are

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<sup>10</sup>Interior Report, 1897, Part III, Irrigation, p.24.

<sup>11</sup>M.K. Thomas, Climatological Atlas of Canada, Dominion Bureau of Statistics (Ottawa: The King's Printer, 1953).

<sup>12</sup>The Irrigation Review, I, No. 4 (July, 1920), p.1.

<sup>13</sup>Ibid.

<sup>14</sup>W.A. Chant, A Report on the Rehabilitation of Dry Lands in Alberta and Crop Insurance 1935-36 (Edmonton: The King's Printer, 1936), p. 22. The dry cycles were 1884-96, 1903-11, 1917-24. In the forty years prior to 1934 twenty-nine years were considered dry.



further exaggerated by the warm, drying, Chinook winds that blow from the mountains across the plains. Their tendency to dry every hollow, gully, and ravine brings the spectre of drought to every part of the plains.

Another outstanding feature of this region is the deep network of furrows cut by the principal rivers and their tributaries that cross the western plains. The rivers rise in the ice-fields of the Rocky Mountains and derive most of their water from the melting snow and ice on the mountain slopes before traversing the plains below. Their rapid rate of fall, coupled with a greatly increased volume of flow during the weeks of the spring thaw, has created deep channels in the prairie soils. Their beds are often two to three hundred feet below the level of the surrounding plains, making it almost impossible to divert their waters onto the lands for irrigation purposes.

Pearce believed that the answer to the problem of a deficient rainfall lay in diverting the river water onto the land. He was bewildered by the fact that irrigation principles, which were being so successfully used in the American West, were unknown in Canada. He later discovered that the reason for this was due to the majority of the western Canadian settlers having come from eastern Canada or from parts of western Europe where irrigation was not practiced.<sup>15</sup> Thus when he mentioned irrigation to the settlers, he found them unaware of the process and he was forced

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<sup>15</sup>W.P.P., "Settlement and Irrigation in that Portion of the North-West Territories West of the Missouri Coteau and South of Township Thirty," A paper read before the Association of Dominion Land Surveyors, Ottawa, January 7, 1889, File No. 13.D.4, p.5.



to explain what he meant. He was certain that they would not let a drop of water reach the oceans unused if they were made aware of the obvious advantages of irrigation farming techniques.

There had been a few small irrigation ditches constructed in southern Alberta prior to Pearce's arrival.<sup>16</sup> After the establishment of the North West Mounted Police at Fort Macleod in 1874, a settler named King had started to dig a ditch from the Oldman River to his hay meadows adjoining the river banks. He was within a few yards of completing his ditch when the lands were ceded to the Piegan Indians as reservation lands in accordance with the treaty of 1877. The same year that King started his ditch, a settler called John Glenn began digging a ditch to divert waters from Fish Creek, about eight miles south of Calgary, to fifteen acres of vegetables and hay meadows on his homestead. This became the first operational irrigation ditch recorded in the Canadian West. Another ditch was constructed on the Highwood River in 1883 by two men named Smith, who were thought to have been previously aware of irrigation. Their neighbors started to build their own irrigation works when the Smiths' crops produced abundant yields, but, these irrigation

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<sup>16</sup>The early history of irrigation in the Canadian West has been taken from the following sources: Interior Report, 1894, Part III, Irrigation, pp. 5-6.; The Calgary Herald, May 3, 1924; W.P.P., "Settlement and Irrigation of that Portion of the North-West Territories West of the Eastern Limit of the Missouri Coteau and South of Township Thirty," January 7, 1889, File No. 13.D.4; W.P.P., "Irrigation Legislation in Canada, "File No. 13.D.4.



projects were not completed before the heavy floods of 1884 destroyed them.

The early attempts at irrigation were crude affairs because the individual settler did not have the necessary capital to erect expensive headgates and flumes. The early ditches were dug by hand--a pick and shovel the only tools--while a few rough boards placed across the intake created flimsy headgates. These were the irrigation works washed away by the floods. The irrigators, unable to withstand the cost of repair to their works, turned to dry farming methods.

The unusually heavy rainfall in the spring of 1884 helped to produce abundant crops for the settlers brought to the West by the Canadian Pacific Railway. Unfamiliar with the average climatic conditions in the West, and not having the experience of earlier crop failures due to previous drought conditions, they looked upon the irrigators as pessimists and lunatics.<sup>17</sup> Their optimism, instead, turned thoughts away from irrigation until 1887 when the sub-soil moisture was unable to bring forth the crops. The settlers failed to realise the cyclical nature of the prairie rainfall and they had no way of discovering that the drought would last for eleven years. This prolonged period

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<sup>17</sup>W.P.P., "What We Are Doing in Regard to Irrigation in Alberta, Canada," An address to the International Irrigation Congress, Denver, Colorado, 1894.



of drought saw large corporations initiate comprehensive irrigation projects capable of delivering large quantities of water to extensive farming areas in the semi-arid regions. The entrance of these corporations into the field of irrigation and their willingness to invest large sums of money in the construction of permanent irrigation works was largely due to the efforts of William Pearce, the chief government officer in the West.

Pearce was born in Dunwich Township, Elgin County, Ontario. When he was twelve, his parents took him out of school to help clear the heavily wooded family farmstead on the north shore of Lake Erie, which his grandfather had claimed in 1809 as a member of one of the original four families to settle in the Talbot Settlement.<sup>18</sup> The fatiguing work of preparing forested lands for agricultural crops helped develop character traits of perserverence and endurance as well as a muscular body, features which were to be of great value in his future careers.

He entered the University of Toronto as an undergraduate in the School of Engineering in 1876 after completing three years of study at St. Thomas Boarding School. When he found the instruction not to his liking, nor the subject matter to be what he had been led to expect, he withdrew from the university to seek employment at the close of his first term.

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<sup>18</sup>W.P.P., Coyne to Pearce, September 22, 1926, File No. 22.41.



He found employment with the Toronto engineering firm of Wadsworth and Unwin, which was then engaged in detailed surveys of the International Boundary on the Thousand Island section of the St. Lawrence River. His three year apprenticeship with the firm was trying, since in addition to working long hours in all types of weather he was expected to pay his own room and board. He received no wages for his work but was given one month's holiday annually, which was spent clearing more land on the family farm.

He never tired telling of the exciting experiences of his apprenticeship days. Field work in unexplored country in every kind of weather was exacting and challenging. His favorite tale concerned the time he was in charge of a survey party working in the wilds of northern Ontario in the middle of winter, far from any other habitation. While leading the way across a stream he fell through the thin covering of ice. Since he was the heaviest man of the party Pearce always led the way on the theory that if the ice held him the other members of his crew could cross safely. In the sub-zero temperatures, Pearce was rapidly encased in a sheet of ice and when he emerged from the frigid waters he found that his chilly mantle acted as an insulating layer over his long winter underwear. Soon he was the warmest member of the survey crew. His encouragement to his men to emulate his performance met with studied indifference.



His strong physique and physical prowess made him an expert woodsman. He boasted that no man could beat him in a race on snowshoes through brush country regardless of the weather, a boast he was often forced to successfully defend. He often wrote of his feelings as the first man to explore the virgin northlands, or of eating pemmican and hard tack under the starry skies of a northern Ontario winter, while many were the nights he and his companions were forced to sleep under their sled dogs to keep from freezing in the bitter cold. His great love for the outdoors, which he gained on these northern surveys, was to later play an important role in the establishment of a national park system for Canada.

In October of 1872, Pearce became a certified Land Surveyor for the Province of Ontario. Remaining with the firm of Wadsworth and Unwin, he was placed in charge of the surveys along the Thousand Islands, at a starting salary of \$100 a month with all his travelling expenses paid. His accurate and detailed work among the Thousand Islands was brought to the attention of Col. J. S. Dennis of the newly formed Department of the Interior of the Federal Government. Dennis offered Pearce employment as a surveyor in charge of a survey party to be engaged in the initial surveys of the Northwest Territories. A lifelong friendship was to develop between these two men although, ironically, much of the work that Pearce instigated was credited to Dennis in his official capacity as the Surveyor-General of Canada.



The thoughts of numberless adventures in the unknown Territories was appealing to Pearce. Accepting the position of surveyor with the Department of the Interior, he found that he was one of the first ten men so employed by that Department. He was the only man hired in 1874, as the Mackenzie Government had embarked on an austerity campaign which had drastically reduced the appropriations for survey work. Although some of the older men were fired, Pearce was employed through the influence of an old school friend, George E. Casey M.P. He was immediately assigned to work in the Territories on the standard meridian and base line surveys.

Between 1874 and 1881, he was almost constantly engaged in making legal sub-divisions in the Winnipeg area. This work was particularly exasperating, as the Métis had been granted the right to two miles of hay lands behind their land claims, for the purpose of procuring winter forage for their horses. The highly mobile Métis had judged the extent of their hay lands by sighting under the belly of their horse towards the horizon which marked the furthest extent of their lands. The distance to the horizon was thought to be approximately two miles, and it was Pearce's duty to register the "outer two mile" claims.<sup>19</sup>

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<sup>19</sup>W.P.P., "Early Surveys and Land Administration in Manitoba," An address to the 34<sup>th</sup> annual meeting of the Association of Manitoba Land Surveyors, 1919, File No. 25.44.



Many conflicting claims to the lands arose due to their vital importance to the Métis' horses during the winter months when forage was scarce. He found it was almost impossible to arrive at a just decision as to the apportionment of the hay lands. In many cases the rightful owners were hunting on the open prairie, and efforts to induce one or the other of the claimants to the land to accept other lands in its place were fruitless, as the Métis considered lands which would not produce hay as worthless, no matter how fertile their soil might be. The procedures that Pearce developed for arbitrating such land claims as well as the many different forms he created for registering the claims and taking evidence of improvements to the lands were readily adopted as standard procedure by the Department.

On completion of his survey of the "outer two miles", he was assigned to make a survey of the natural resources of the Turtle Mountain region, of what is now southern Manitoba, with a view to making recommendations for the conservation of these resources for settler use. His report urged that large tracts of land in the region be protected from exploitation by large business corporations, safeguarding vital fuel and water supplies for the actual farmers. He recommended that storage dams be constructed on all water courses and that timbered areas be reserved for the benefit of the Canadian people.

His love for detail, and the accuracy with which he carried out his assignments, earned him rapid promotion within



the Survey Branch. His engineering competence was favorably commented upon when he was appointed to the Board of Examiners for the Dominion Lands Survey in 1875. This promotion was followed in 1882 when, much to his surprise, he was made a member of the Dominion Lands Board as the Inspector of Land Agencies, a position he held until the Board was abolished in 1897.<sup>20</sup> The other member of the Lands Board was the Commissioner for Dominion Lands, Aquila Walsh. The function of the two member Board was to consider disputes arising out of land settlement and to adjudicate the same. Pearce was chosen for the office because he had performed more surveys for the Department than any other man, and his past performance indicated that no matter what the nature of his duty, nor at what time of year that he were assigned a task, he would respond readily and cheerfully.<sup>21</sup> The administration had become annoyed with certain of their surveyors who had numberless excuses to explain why an assignment could not be attempted at the required time. As a result, the Department had appointed Pearce to the Lands Board over men who

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<sup>20</sup>Interior Report, 1897, Report of the Deputy Minister, p.2.

<sup>21</sup>W.P.P., "A Brief History Regarding the Settlement of Lands West of the Missouri Coteau and South of Township 30," January 7, 1889;" A Brief History Regarding the Settlement of Lands," A manuscript copy of a proposed chapter for a general history of the West, October 31, 1881, File No. 19.12.



were more senior, because he would go where they wanted him to go, and when they wanted him to go.<sup>22</sup>

The scope of his new position gave Pearce added responsibilities. He was now charged with formulating regulations for the Department and of recommending legislation to the Federal Government for the administration of lands, forests, minerals, and waterways throughout the entire Northwest.

One of the first acts of the Lands Board was an attempt to impose a uniform system of land grants amongst the various Land Agencies under its control. Pearce and Walsh accomplished this exacting duty by making frequent inspections of the Land Agencies and by insisting on strict compliance with Departmental regulations governing the disposal of Dominion Lands. The business of the Board grew so rapidly that additional men were assigned to the various Land Agencies as Information Officials and Homestead Inspectors. The creation of the new positions and the regulations governing their operation were largely the responsibility of William Pearce.

In 1883, a Commission had been created under the Great Seal of Canada appointing the Deputy Minister of the Department of the Interior, Mr. Lindsay Russell, to investigate the land claims of the half-breed population of the Territories.

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<sup>22</sup>Ibid.



Owing to ill health, Russell resigned his Commission and Pearce was appointed in his place.<sup>23</sup> He was charged with investigating and reporting to the Lands Board the situation of the land claims in the Calgary, Edmonton, Battleford, and Prince Albert settlements. He was able to readily resolve the land claims of the English speaking inhabitants and he hired a Cree interpreter to aid him in settling the Indian land claims, but, he would not authorize the added expenditure of employing a French-speaking interpreter to aid in settling the French-speaking Métis claims as the local Land Agent, Mr. Duck, could speak their language. Before Duck's report could be filed the Saskatchewan Rebellion had broken out.<sup>24</sup> There is a strong possibility that had Pearce made use of an interpreter and personally settled the claims of the Métis at Batoche, as he had done in settling the Cree claims in Prince Albert, the Rebellion might not have occurred.

After the suppression of the Rebellion, Pearce was ordered to Ottawa to make a comprehensive study of the causes of the insurrection and to assess the Government's responsibility in the matter. He was given access to all the relevant information, including the private correspondence of Prime Minister Macdonald.

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<sup>23</sup>W.P.P., "Half-Breed and Indian Outbreak 1885: Causes of and Suppression of Same," File No. 14.F.3, p.2.

<sup>24</sup>Ibid.



Several thousand copies of the report were published in 1886<sup>25</sup> and were used extensively in the election of 1887 to discount opposition charges of maladministration in the West. When the statistics of his report were questioned by the Liberals, Pearce welcomed the opportunity extended him by the Prime Minister of replying to the Liberal charges of maladministration in the Territories by delivering a series of speeches defending his findings during the election campaign. He seemed unaware of his unique position as a civil servant actively campaigning for the Government from election platforms. He rationalized his position by stating that he was merely obeying the orders of the Minister of the Interior, who also happened to be the Prime Minister, in defending a Departmental document. His efforts on behalf of his report were not received kindly by the Liberals, who from this point on considered him highly partisan. Particularly damaging to Pearce's future career was the hostility created between himself and Frank Oliver, a leading Edmonton Liberal and publisher of the Edmonton Bulletin, who, along with his party, termed Pearce's report the "Blue Book of Romance".<sup>26</sup>

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<sup>25</sup>William Pearce, Detailed Report Upon All Claims to Land and Rights to Participate in the North-West Half Breed Grant by Settlers Along the South Saskatchewan and Vicinity West of Range 26, W2nd Meridian, Being the Settlements Commonly Known as St. Laurent or Batoche, St. Louis de Langevin, and Duck Lake. (Ottawa: The King's Printer, 1886).

<sup>26</sup>W.P.P., Pearce to E. Grogan, November 3, 1908, File No. 19.11.



After the election campaign Pearce returned to the West where a backlog of land claims awaited his attention. The land boom which had brought over two thousand settlers to Calgary in 1884<sup>27</sup> had received added impetus as the Canadian Pacific Railway reached the summit of the Rocky Mountains. In anticipation of large scale timber and mining development in the eastern foothills of the mountains the Department of the Interior, in 1885, created the office of Superintendent of Mines at Calgary, for the purpose of administering the expected mineral development.

The jurisdiction of the new office was immense. The area of responsibility stretched from the Red River in the east to the Rocky Mountains in the west and from the International Boundary to the 56 parallel in the north. Within these bounds Pearce was the senior official of the Department and was charged with proposing regulations for the administration of western lands, for making recommendations for the settlement of all claims to land, and of annually reporting on the state of the West at large to the Minister of the Interior. His broad powers affected all facets of western development and the consistency with which the Department acceded to his requests earned him the nickname of the "Czar of the West."

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<sup>27</sup>L. G. Thomas, "The Ranching Period in Southern Alberta," (Unpublished Master's thesis, University of Alberta, Edmonton, 1935), p. 61.



In 1887, Pearce moved his office permanently to Calgary, and with the permission of the Minister of the Interior he bought a large block of land on the south bank of the Bow River for his home.<sup>28</sup> His fifteen room mansion, which he called the Bow Bend Shack, was reported to have been the finest house between Winnipeg and Vancouver at that time. He furnished the interior in walnut from wood cut on the family farm in Ontario. Although the house had the unique luxury of central heating, Pearce would not permit blinds on any of the windows, lest they spoil his view of the mountains. The house was demolished in 1957 to make way for a Simpson-Sears' warehouse, while the lands surrounding the house have been turned into a picnic park and ball-diamond suitably called the Pearce Estate.

From his first visit to Calgary in 1883, Pearce had become an enthusiastic supporter of the West. Nothing that concerned the welfare of his beloved foothills escaped his notice. His annual reports to the Department of the Interior are filled with proposals for the establishment of new industries which could profitably exploit the natural resources of Alberta. He believed that the soil, mineral resources, and the climate of the western prairie were the finest in the world. He urged the establishment of dairy industries to take advantage of the

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<sup>28</sup>The present address of the site of Pearce's Estate is 2014-17th Street East, Calgary. See Map I.



nutritive grasses, and was more than willing to invest his own money in any venture that had prospects of benefitting the westerners.

The only factor missing in this land of promise was a sure supply of water. Without sufficient water the settlers would not be able to maintain profitable crop yields and would be tempted to claim larger blocks of land in order to maintain an overall volume of grain production. No matter how fine the soil, or how beautiful the climate, the far West would never support a dense population unless water supplies could be found. The incoming settlers helped to focus attention on the acute water shortage. As in Utah, it was a case of finding water or of getting out.

Pearce considered irrigation to be the answer. He thought it stupid to complain about a deficient rainfall when there was plenty of water flowing unhindered past their doorsteps to the ocean. He proposed building dams on the rivers that could not only be used for irrigation purposes but for hydro-electric power as well. In addition, the dams would act as flood control devices, and by drowning the ugly headwater swamps and marshes create beautiful lakelets in the mountains. This solution was so obvious to Pearce that he often became impatient with those who could not see his point of view. The general ignorance of irrigation techniques, a relatively sparse population, and the immense cost of constructing irrigation



works, were the major obstacles faced by Pearce in his efforts to irrigate the West.



## CHAPTER II

### THE PROMOTION OF IRRIGATION

Pearce realized the engineering difficulties involved in raising water from the depths of the river valleys to the heights of the surrounding plains. Pumps large enough to carry the large volume of water required for irrigation projects had not yet been perfected and their purchase price was prohibitive to any but larger corporations. The only alternative to pumping water from the rivers was to erect upstream dams which could divert water from the mountain streams at an elevation high enough to enable the water to be funneled down to the irrigation plots. The undertaking of such extensive engineering constructions was far beyond the capabilities of the individual settler. The inability of the flimsy works, constructed by the individual irrigators, to withstand the floods of 1884 reflected the need for a sound, comprehensive irrigation program. The total destruction of the smaller irrigation works dealt a serious blow to irrigation, as many of the irrigators turned to dry farming methods in the years that followed.

Simultaneously with the great rush of settlers into southern Alberta, enormous strides were being made in dry farming techniques. Every agricultural college in the western portion of



America was grappling with the problem of the utilization of semi-arid regions that could not be reached by irrigation. Wonderful success was achieved through the general introduction of summer fallowing, which helped to conserve the limited rainfall for use during the growing season. This system gradually permeated the arid region of the continent, and helped to change the agricultural pattern of southern Alberta from ranching to dry farming. The success of dry farming methods and the knowledge of the large amounts of unclaimed virgin lands in the far West was not conducive to thoughts on expensive irrigation construction. While the country as a whole benefitted initially, there can be no doubt that dry farming materially delayed the progress of irrigation. When dry farming methods were unable to produce economic crops in the 1890's,<sup>1</sup> due to the continuance of extreme drought conditions, the problem again had to be faced of creating a sentiment in favor of irrigation amongst a class of farmers entirely ignorant of the benefits and the simplicity of irrigation farming.

Pearce was concerned that all available water supplies would be claimed by the settlers before any comprehensive irrigation project could be formulated. He feared the possibility

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<sup>1</sup>See above, p. 5.



that there would not be enough water to irrigate all the lands which could benefit from an artificial water supply, and he was doubtful that the total volume of water from all the mountain streams would be of use to more than half of the semi-arid region. If settlers were permitted to indiscriminately claim the right to use these waters as they saw fit, the amount of land which could benefit from irrigation would be substantially reduced. In order to ensure that the waters were apportioned in such a manner as to be of the most benefit to the most people, Pearce felt that the Government should claim the right to all the water and apportion its use in an arbitrary manner. In this way the maximum benefit would be attained.

In his official report of 1885,<sup>2</sup> he began to urge the Department of the Interior to become involved in a comprehensive irrigation program to aid the drought stricken areas of southern Alberta. "Pearce", wrote A. M. Burgess, the Deputy Minister of the Interior, "raises what is practically a new question when he discusses the irrigation of comparatively dry tracts in the grazing country."<sup>3</sup> He was the first government official to draw attention to the necessity of irrigation on the prairies, and from

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<sup>2</sup>Interior Report, 1885, Report of the Deputy Minister, p. xxiv.

<sup>3</sup>Ibid., Dominion Lands, Part I, p. 20.



that moment on became known as the Father of Irrigation in Alberta, despite the fact that he had not been the first to actively engage in actual irrigation works. His persistent efforts to further the cause of irrigation soon earned him another name among his fellow officials as the "irrigation crank" of the Department.<sup>4</sup>

The Department did not agree with their Superintendent of Mines that irrigation policies, by offering higher crop yields through more intensive farming, would act as a stimulant towards immigration. There was a widespread belief among the senior officials of the Department that despite successful irrigation projects in the United States, immigrants would avoid the West like the plague if it were publicized that there were arid lands on the prairies. "Any agitation on the subject", Burgess informed Pearce, "will lead the outside public to think the Northwest an arid country." He continued, "It is hard to get people the other side of the Atlantic to realise that the Northwest is not a subdivision of Manitoba."<sup>5</sup> The concern felt by Prime Minister

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<sup>4</sup>W.P.P., "What We Are Doing with Regard to Irrigation in Alberta, Canada," A paper read to the International Irrigation Congress, Denver, Colorado, 1894, File No. 13.D.4, p. 1.

<sup>5</sup>W.P.P., A. M. Burgess to Pearce, January 31, 1891, File No. 13.



Sir John A. Macdonald and the officials of the Canadian Pacific Railway over the possible loss of land sales, if adverse publicity on the Canadian West were voiced by a Department of the Interior official, was conveyed to Pearce in further correspondence from Burgess.<sup>6</sup>

Departmental pressure was brought to bear on Pearce to prevent him from publicizing drought conditions in the West. In 1890, Pearce was asked to prepare a paper on the progress of irrigation in Canada for the International Irrigation Congress. When he sent a copy of his proposed address to Burgess for Departmental approval the Deputy Minister refused permission for the speech to be delivered. "I do not want a hornets [sic] nest stirred up", he explained, "As I pointed out before", he continued, "a very small portion needs irrigation under favorable conditions. Your talk indicates a considerable area needs it."<sup>7</sup> The reason given Pearce for refusing him permission to deliver his address was that "the Canadian Pacific Railroad feels that the talk would do a lot of damage to land sales," and, Burgess concluded, "I presume they know."<sup>8</sup>

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<sup>6</sup>W.P.P., A. M. Burgess to Pearce, January 31, 1891, File No. 13.A.1.

<sup>7</sup>W.P.P., A. M. Burgess to Pearce, January 21, 1891, File No. 13.A.1.

<sup>8</sup>W.P.P., A. M. Burgess to Pearce, February 12, 1891, File No. 13.A.1.



When it became obvious that the Government was not going to recognise the need for irrigation, Pearce endeavored to preserve as much of the available water supply as possible by designating all unclaimed water courses as stock reserves. In this manner he planned to deny these vital areas to the farmers, who would not in any case use the water efficiently. He could not foresee a densely populated farming community emerging in a semi-arid region where in addition to a deficiency of water there was a noticeable absence of large markets for farm produce. Farming, he concluded, was both impractical and uneconomical in the far West, for even if the small farmer were permitted to claim lands adjacent to water courses he would be financially unable to utilize more than a minute percentage of the western lands leaving the remaining 97% of the prairie barren.<sup>9</sup> A more efficient use of the arid lands could be obtained by supporting the dominant ranching interests. The cattle would use the barren lands as pasturage, provided they had access to fresh water supplies. The culture best suited to survive was the ranching industry and as the economic stability of the West was dependent upon the supply of water to the large herds of cattle, Pearce proposed that the farming interests be denied their use.

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<sup>9</sup>Interior Report, 1885, Report of the Superintendent of Mines, Dominion Lands, Part I, p. 19.



He had already noticed a conflict between the farming and ranching interests in regard to demands for priority rights to water usage. The settlers were squatting on all the unclaimed water sources and denying their use to the range cattle. While their dogs drove the cattle away from the springs, they would erect fences and start to make improvements to the land in anticipation of being confirmed in their land claims. They would not open their fences to enable the cattle to approach the water for nourishment as they feared the destruction of their gardens and crops. As the cattle would no doubt desire to rest after drinking and would likely regard vegetables as delicacies to be sampled, their fears were well founded. There being little likelihood that the divergent interests would be reconciled, Pearce recommended support of the ranching industry as the culture best suited to survive in semi-arid lands.

Pearce reported that the stock capacity of Alberta was governed only by the ability to withstand the six week winter. Appreciable stock losses amongst the range herds were reported in the winter of 1886-87, when the loss of approximately 12%<sup>10</sup> of the cattle was attributed to the lack of shelter and the lack of winter fodder. The Department recognised the need for additional stock watering and shelter reservations to carry the

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<sup>10</sup>Interior Report, 1887, Report of the Deputy Minister, p. xix.



cattle through the winter period. The addition of new reservations was favorably received by the ranchers, but the dissatisfaction of the farmers became more vocal as their numbers increased. The demand for access to springs and other water supplies by the settlers was to embroil Pearce and the Department in public controversy.

The conflict between the ranchers and the farmers over the right to the use of water smouldered until 1896. In that year a settler named Bolton was evicted from his homestead on lands adjoining a fresh water spring on a stock reserve. He had made extensive improvements to the land and had developed a fairly large herd of cattle. When notified of his eviction from the reserve, he immediately wrote to Frank Oliver, the newly elected M.P. for Edmonton, to ask what the Liberals were going to do about the high handed attitude of certain officials in the Department of the Interior towards men like himself.<sup>11</sup> The fact that he was squatting on unsurveyed lands on a stock reserve did not dampen his feeling of outraged innocence.

In writing to Frank Oliver M.P., Bolton explained that since his arrival at the springs in 1891 his herd had grown to 75 head which could almost entitle him to be called a rancher himself. When he had started his farm he had not noticed any

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<sup>11</sup>W.P.P., A. Burton to Frank Oliver, October 20, 1896, File No. 1.B.8.



range cattle within miles of the watering holes, and as no one had told him that this was indeed a stock reserve, he had assumed it was homestead land. The Homestead Inspector who had tried to evict him was undoubtedly in the pay of Mr. Pearce who "works against the smaller farmer in favor of the ranchers",<sup>12</sup> he complained.

Oliver championed the settler's cause with a vengeance. He too had had dealings with the arbitrary Superintendent of Mines. In 1882 a Mr. M. Deane D.L.S. made a survey of the land claims in the Edmonton area. Pearce had warned him not to register any improvements on the land as there was a good possibility that the land claims overlapped sub-division lines, but, he was to note these improvements and leave it to the courts to decide the validity of the settlers' land claims. When Pearce re-surveyed the area in 1886 he found that Deane had registered many of the improvements, and as he had feared, many of them were not within the boundaries of the proper areas. In an effort to regularize the town lots, Pearce ordered the settlers along the river bank to align their plots with the Hudson's Bay Company land. In this re-organization Oliver was compelled to take down some of his improvements, now declared to be on another person's land.<sup>13</sup> An even deeper feeling of injury

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<sup>12</sup>Ibid.

<sup>13</sup>W.P.P., "Memorandum Concerning Manitoba, Saskatchewan, and Alberta," File No. 19.12, pp. 5-10.



to the editor of the Bulletin was created when it was discovered that land lots to the east of his were being left in an irregular shape due to the bend in the river.

In defending Bolton from the threat of eviction, Oliver complained that this was "another case in which a settler is being driven off by plea of stock reserve." He continued, "I think you will agree with me that it is not in the public interest that a settler having 75 head of cattle should be clubbed out of the country by Government authority. The Department should stay the hand of their apparently irresponsible and irrepressible officials."<sup>14</sup> On his way to Ottawa, he threatened to impeach Pearce before the Bar of the House of Commons for his infamous deeds in evicting helpless settlers from their hard won homesteads.<sup>15</sup> Throughout his tenure as a public official, Oliver continually pressed for the removal of Pearce from the civil service.

Oliver was given access to the files of the Department of the Interior and when he could find no legal cause for complaint against the Superintendent of Mines, he dropped the charges he had made. In every case, Pearce was discovered to have acted well within the limitations of the Dominion Lands Act. However, he refused to apologize to Pearce for his statements,

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<sup>14</sup>W.P.P., F. Oliver to R. Scott, October 29, 1896, File No. 1.B.8.

<sup>15</sup>W.P.P., Pearce to A. Meighen, March 22, 1919, File No. 22.89.



when asked to do so by Clifford Sifton, explaining that he had merely reiterated the facts as he saw them and he was not responsible for any inference the general public might draw from them.<sup>16</sup> Unable to directly attack Pearce, he began a program of action designed to abolish all stock reserves in the far West for the purpose of utilizing the reserves for homestead settlement.

Pearce was hard pressed after 1896 to maintain his position in the face of a deluge of complaints about his administration of western lands which accompanied the advent of the Liberal regime in Ottawa. He asked his ranching friends to start a lobby in Ottawa to demonstrate the need for stock reserves. "Of course your interests are to some extent being defended by me",<sup>17</sup> he told them. For his efforts on their behalf, the North West Cattle Company offered him a silver tray and tea service. He refused the gift stating that what he had done had been done for the benefit of the West and not particularly to aid the ranching industry. "I have repeatedly stated that any Government officer who took a testimonial...was recreant to his trust", he explained. The danger in accepting a gift was that "any recommendations or line of policy he might afterwards advocate would naturally either be ignored altogether, or because of his advocacy an opposite

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<sup>16</sup>W.P.P., T. M. Daly to Pearce, November 5, 1897, File No. 22.89.

<sup>17</sup>W.P.P., Pearce to Macdonald of Glengarry Ranch, November 17, 1896, File No. 1.B.8.



policy adopted."<sup>18</sup> Despite his refusal of the gift, there is considerable evidence that other, less tangible, means were discovered for rewarding Pearce, for shortly after this incident Pearce came into the possession of small amounts of shares in some of the larger ranches.<sup>19</sup>

The decision of the Liberal administration to continue Pearce in the Government service was based on the fact that the new Minister of the Interior, Clifford Sifton, considered him "to be a clever and valuable servant."<sup>20</sup> His unique opportunity for travel and his detailed observations of western settlement since 1874 had made him an expert on western affairs, whom the Government could not easily replace.

Pearce felt that the many complaints seeking his dismissal were due to his abrupt manner. He knew that he often lacked tact when dealing with land claims, but the heavy pressure of his work often did not permit him to be polite. His job, he felt, was an unpleasant one as in any dispute over land claims there was always one dissatisfied party when the judgement was announced. However, he had never shirked his responsibility to the Department

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<sup>18</sup>W.P.P., Pearce to Stimson, Secretary of the North West Cattle Company, March 13, 1898, File No. 22.136.

<sup>19</sup>W.P.P., Undated pencilled jottings on ledger sheets in an uncatalogued file relating to Pearce's personal financial holdings.

<sup>20</sup>W.P.P., J. S. Dennis jr. to Pearce, February 18, 1897, File No. 22.126.



in order to ingratiate himself with the settlers, which some of the more popular members of the Department had done.<sup>21</sup> With the knowledge of Sifton's support a letter was sent to Pearce ordering him to be more tactful in the future and he "was to try to give information in a more pleasing manner."<sup>22</sup>

The effect upon Pearce of what he considered to be an attempt at character assassination did not deter him from his efforts to safeguard the water courses. However, it was at this time that he resolved to leave the Department at the earliest possible moment, as he could see little hope for his advancement as long as Oliver was in Ottawa. His friends counseled him to remain and not to act in a precipitate manner but to wait until the affair had blown over before resigning. After 1896, Pearce found that his influence and value to the Department rapidly declined.

Meanwhile, during these years when the controversial questions of stock watering reserves and stock shelter belts were before the public, the need for irrigation was becoming acute. Continued immigration in the 1890's had emphasised the need for an artificial water supply. The plight of the settlers during the continued drought of the late 1880's and early 1890's forced the Government to recognise that a problem did exist.

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<sup>21</sup>W.P.P., Pearce to Hull, Secretary of the Department of the Interior, November 16, 1896, File No. 20.9.

<sup>22</sup>W.P.P., A. M. Burgess to Pearce, November 5, 1896.



The Government's change in attitude towards irrigation was in part due to the efforts made by the Mormons to irrigate lands on their colony at Cardston. In 1886, Ora Card had been seeking lands in southern British Columbia for the purpose of starting an irrigation project.<sup>23</sup> The Dominion Lands Agent advised him to see Pearce in Calgary, who would show him lands more to his liking. Card was so impressed with the lands in the Lethbridge Plains region that he returned the following year with a large number of settlers from Utah. Pearce wrote of their coming that "their example and experience which they are likely to show in the matter of irrigation will be of great importance to other settlers along the foot hills [sic] of the Rocky Mountains".<sup>24</sup> In 1888, Card made several trips to Ottawa to confer with the Prime Minister, Sir John A. Macdonald, about regulations governing the colony's acquisition of lands. While there he was able to inform Macdonald of the experience his settlers had had with irrigation and the many benefits that would accrue from the irrigation of arid lands in southern Alberta.<sup>25</sup> The faith of Card in irrigation no doubt helped to convince the Prime Minister of the value of this farming technique.

In his annual report of 1894 Burgess explained the Government's previous indifference to irrigation. "Mr. Pearce,"

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<sup>23</sup>A. James Hudson, Charles Ora Card: Pioneer and Colonizer (Cardston: by the author, 1963), pp. 125, 139-143.

<sup>24</sup>Interior Report, 1887, Report of the Superintendent of Mines, p. 11.

<sup>25</sup>Hudson, Ora Card, p. 125.



he said, "would have brought this question more prominently before the public...but for my own fear that the discussion might lead intending settlers to imagine that the conditions requiring the artificial application of water to farming lands extended over a far greater portion than is actually the case".<sup>26</sup> Looking back on the change of policy, Col. J. S. Dennis jr. wrote that it had been "due to the lengthy reports upon this subject and the persistent advocacy of the principle of irrigation by Mr. William Pearce, Superintendent of Mines, more than to any other cause, that the public had at last seen the necessity for irrigation and the benefits secured therefrom."<sup>27</sup> It was hoped that Government control of water usage would result in a more equitable and more efficient apportionment of the vital liquid.

Once the Government had decided on a course of action, and had acknowledged the need for irrigation in the far West, nothing could dissuade it from its course. Many arguments that would have been readily used against irrigation farming techniques in the past were ignored. A query addressed to the Department from a settler who was worried that irrigation water might cause rheumatism, or that the evening fog rising from the irrigation ditches might carry Malaria, such as that caught by the Minister of the Interior, T. M. Daly, in Idaho in 1893, was dismissed

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<sup>26</sup>Interior Report, 1894, Report of the Deputy Minister, p. xvii.

<sup>27</sup>Interior Report, 1895, Report of the Chief Inspector of Surveys, Part III, Irrigation, p. 21. Dennis was the son of the Surveyor-General of Canada, who had employed Pearce as a surveyor for the Department of the Interior in 1874.



with the terse reply that "our climate won't carry it."<sup>28</sup> The settler was also informed that the Government would proceed to administer the apportionment of western water, and intended to undertake a comprehensive survey of the available water sources in the Territories.

In the spring of 1892, Pearce, the only official in the Department with a widespread knowledge of irrigation practices in the United States, was asked by the Deputy Minister to prepare a treatise on irrigation and irrigation laws with a view to formulating comprehensive irrigation legislation for the Territories.<sup>29</sup> The treatise was to be drawn up in the form of regulations outlining the Government's responsibility in the field of irrigation. Pearce gathered information on current legislation and regulations concerning irrigation from various states engaged in irrigation farming in the American West, as well as from New South Wales. The pragmatic report, resulting from a thorough study of these irrigation laws and their administration in other countries, was thought to be the most comprehensive and most practical proposal for irrigation legislation anywhere in the world.

That fall, Pearce was called to Ottawa to consult with the senior members of the Department about his recommendations. While there the Minister of the Interior asked him to draw up a draft Bill to "get something going."<sup>30</sup> He felt that he had been

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<sup>28</sup>W.P.P., E. Fortier to A. M. Burgess, November 17, 1894, File No. 13.E.7.

<sup>29</sup>W.P.P., A. M. Burgess to Pearce, October 24, 1894, File No. 13.E.7.

<sup>30</sup>W.P.P., Pearce to E. Mead, March 18, 1896, File No. 13.E.5.



chosen for this task because of his vast experience in irrigation matters, and also due to the fact that he was the President of the Calgary Irrigation Company, the only large irrigation company in existence in Canada.<sup>31</sup> Pearce was assigned to the Justice Department after departmental criticism of his proposals had been met. There, with the help of Mr. Fraser, the Bill was drafted into proper legal form. The Bill was later presented to the Cabinet for approval and still later presented to the House of Commons.<sup>32</sup>

The most contentious issue of the draft legislation was the authority vested in the Government to suppress the riparian rights to water in the Territories. Under these rights it is generally conceded that those who own land adjacent to a water source have an unlimited right to its use. However, in the far West, where there was so very much more land requiring water than there was water to place on it, the suppression of these rights was recommended to ensure that the available water was used for the maximum benefit of the people of the Territories at large rather than for the interests of a small number of farmers. The fact that there was not enough water to irrigate all the land implied an arbitrary decision as to the apportionment of water rights. The Government, through the Department of the

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<sup>31</sup>See Chapter III for the history of the Calgary Irrigation Company.

<sup>32</sup>W.P.P., Pearce to E. Mead, March 18, 1896.



Interior, was best qualified to make such decisions based upon their surveys of the semi-arid regions.

In the United States, the failure to suppress riparian rights to the waters of the Great Central Plains had led to a confused period of costly litigation when the headwater states had over-developed their irrigation systems to the point where little water was available to the downstream regions. The subsequent suppression of riparian rights to water in Wyoming and Colorado had proven costly, due to the inflated prices asked by the owners of the riparian rights for relinquishing them. Canada, with a relatively sparse population in the semi-arid region, was more fortunate in that the Government could easily suppress the riparian rights without upsetting a large population. By suppressing the riparian rights to water before settlement took place, the Government would avoid the inevitable conflicts that would arise over the apportionment of stream flow.<sup>33</sup>

Looking back on his part in the framing of the Northwest Irrigation Act Pearce wrote, "the Act was the outcome of careful consideration of the reports of various state engineers in those portions of the Union where irrigation is carried out to any extent, and the utterances of practical men eminently qualified to speak with authority upon the

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<sup>33</sup>W.P.P., An undated and unfiled memorandum on riparian rights.



subject, as well as my personal observations in several states which enabled me to compile the suggestions to be kept in view."<sup>34</sup> While drafting the clauses of the draft Bill, Pearce had turned to advantage what had been the results of experiences, and what was still being practiced in Utah, Wyoming, and Colorado, states which "represent conditions more nearly similar to our own than any others and where irrigation has been established for a considerable time and to a great extent."<sup>35</sup> In his files are copies of the Irrigation Acts from the various western States and comments upon their effectiveness in administering irrigation projects. He continually drew attention to the suppression of riparian rights as the major factor in determining whether irrigation was to be successful or not, as in the case of its success in Colorado where water was "declared to be the property of the public."<sup>36</sup>

The Irrigation Bill was presented to the House of Commons by the Minister of the Interior, T. M. Daly, on February 14, 1893.<sup>37</sup> The optimistic hopes of the irrigators

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<sup>34</sup>W.P.P., "Colonization and Irrigation," A copy of an address to the Western Canada Irrigation Association, n.d., File No. 13.E.7.

<sup>35</sup>Ibid.

<sup>36</sup>W.P.P., A collection of extracts from the Irrigation Acts of Colorado, New Mexico, Utah, Montana, California, and Wyoming, File No. 1.B.8.

<sup>37</sup>Official Reports of the Debates of the House of Commons, Vol. xxxvi, p. 3344.



for its early passage turned to disappointment when it was announced that the Bill would not be given a second reading due to the press of official business, which would draw out the session to inordinate lengths. The West was greatly perturbed over the shelving of legislation which was thought to hold the key to the answer to the problem of securing sufficient water supplies for western lands. Pearce "couldn't remember ever feeling more blue" when the Minister informed him of the Cabinet's decision.<sup>38</sup>

The danger of the irrigation legislation being permanently shelved was realized by Pearce, who immediately started to organize irrigation clubs and associations throughout the West for the purpose of agitating for an Irrigation Act. "I recollect myself one time going to Macleod and holding a meeting there, and starting up enthusiasm to see if pressure could be brought on Parliament...so that we could go to work and do something,"<sup>39</sup> he later related. "We had great difficulty in getting our representatives to see irrigation was necessary," he continued, "we started agitation for a general irrigation Act and constituted ourselves into an irrigation league and put money out of pocket to carry on propaganda."<sup>40</sup> Out of the 212 Members of Parliament only two or three were discovered who knew what irrigation was

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<sup>38</sup>W.P.P., "The Proposed Northwest Saskatchewan Irrigation Project and Some Reminiscences of Irrigation in Western Canada," A report to the Western Canada Irrigation Association, Medicine Hat, August, 1919, p. 7.

<sup>39</sup>Ibid.

<sup>40</sup>Ibid.



or why it was necessary. "Its what you do when you water your lawn,"<sup>41</sup>scolded an exasperated Pearce.

At a convention in Calgary in March of 1894, the Southwestern Irrigation League was formed under the auspices of the Calgary Agricultural Society for the purpose of promoting irrigation. Particularly large delegations were present from Lethbridge and Medicine Hat. Strong resolutions were passed asking the Government to embark on comprehensive surveys of the semi-arid portions of the prairies and to make a master control plan for the development of southern Alberta which would do away with smaller, private, irrigation projects.<sup>42</sup>

Out of this meeting, referred to by the irrigators as "the most important meeting in the interests of the country ever held between the Red River and the Rocky Mountains,"<sup>43a</sup> a delegation was chosen to call on Prime Minister Thompson and urge the Government to take action on the irrigation problem. Richard Pilling, who had taken out the first stream diversion

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<sup>41</sup>W.P.P., "What We Are Doing in Regards to Irrigation in Alberta, Canada," An address to the International Irrigation Congress, Denver, Colorado, 1894, File No. 13.D.4.

<sup>42</sup>The Calgary Herald, "Irrigation Convention," March, 1894.

<sup>43</sup>Ibid.



license for the purpose of irrigation from the St. Mary's River in 1889, was among those selected to call on the Prime Minister. His was the first successful irrigation project recorded by the Department of the Interior, and "it was his conversation that took the Premier's ear."<sup>44</sup> Pilling could talk from personal experience on the values of irrigation farming methods, while his knowledge of the subject and his enthusiasm for irrigation impressed the Prime Minister, who promised that the irrigation legislation would go through in the next session.<sup>45</sup>

The Irrigation Bill was introduced for its second reading in the House of Commons on July 23, 1894.<sup>46</sup> Pearce was concerned over the possibility of a long and acrimonious debate over the clause suppressing riparian rights. He had recently received information that this particular point had been debated for twenty-six consecutive days in the New South Wales legislature before it was passed. However, Pearce later recalled, "fortune favored us," as the Bill came up for its second reading on the hottest day he could remember. "I think it was fortunate for us," he wrote, "because the members had

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<sup>44</sup>W.P.P., "The Proposed Northwest Saskatchewan Irrigation Project and Some Reminiscences of Irrigation in Western Canada," An address to the Western Canada Irrigation Association, Medicine Hat, August, 1919, p. 6.

<sup>45</sup>Ibid.

<sup>46</sup>Official Record of the Debates of the House of Commons, Vol. xxxvii, p. 4948.



not enough energy to discuss it."<sup>47</sup> He added that anyone with enough energy to move a Bill could have had the most villainous legislation approved that evening. That night the Irrigation Bill went "through its second reading in two hours in the House of Commons."<sup>48</sup>

The Northwest Irrigation Act provided for close Government supervision of all irrigation projects. Repeated Government approval was required for the various phases of construction of ditches, canals, and headgates. For a fee of \$500 a corporation was given the legal right-of-way to make surveys over all lands within a proposed irrigation area. Department of the Interior engineers would study the preliminary surveys to ascertain if the water were being diverted where it would benefit the maximum number of people. If the scheme were feasible, the detailed plans were to be placed on file for public viewing, and notice of the application for stream diversion had to be well advertised for varying lengths of time in the Canada Gazette and in the local newspapers. If no opposition was forthcoming from the public, the plans were certified and permission would be granted to start construction. In all cases

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<sup>47</sup>W.P.P., "The Proposed Northwest Saskatchewan Project and Some Reminiscences of Irrigation in Western Canada," File No. 13.D.4, p. 7.

<sup>48</sup>Ibid.



the final approval of the irrigation projects was placed in the hands of non-political Departmental officials, who were to base their findings and recommendations on engineering and legal grounds.<sup>49</sup>

The Irrigation Act provided for detailed surveys to be made of the arid regions by the Department of the Interior. Col. J. S. Dennis jr.<sup>50</sup> was placed in charge of the Irrigation Branch and charged with carrying out extensive surveys in the West in addition to the licensing of irrigation projects. Detailed surveys were necessary to help decide which irrigation schemes should be given Government approval. Without the data from a general survey, a fraudulent scheme might be authorized for areas of porous soil, where the water would drain away to the water table, or canals could be planned in an uphill direction towards better lands for the purpose of enticing eastern investment into the projects. At this time, Dennis probably knew as much about irrigation as Pearce, having shared the same summer office with the Superintendent of Mines and becoming interested

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<sup>49</sup>W.P.P., "Irrigation Legislation in Canada," A report to the International Irrigation Congress, Denver, Colorado, 1894, File No. 13.D.4.

<sup>50</sup>The son of the late Surveyor-General of Canada was a close friend of Pearce. Pearce had written several reports defending the father for his actions in the Red River uprising of 1870. The son was to prove an invaluable ally to Pearce in the future.



in irrigation from conversations with Pearce. He had also assisted Pearce and Fraser in drafting the technical details of the Irrigation Act upon his return from studying the engineering aspects of irrigation in Colorado in 1893.

Dennis planned to superimpose the data obtained from the irrigation surveys onto the maps of the block survey of the Territories. Additional elevations would thus be recorded and contour lines could be sketched in. Data on the quantity and source of all water would be noted, with the larger streams being cross-sectioned and their volume of flow at low and high levels indicated.<sup>51</sup> From this detailed map of the West, Dennis hoped to be able to regulate the first and subsequent usage of western waters. When completed the surveys would provide information for administering the irrigation laws as well as provide general information to the public on possible sites for reservoirs and irrigation canals.

Dennis initiated two other survey projects in the West. He authorised the use of photographic equipment in a topographical survey of the foothill region of the Eastern Rockies, which was designed to help locate reservoir sites and possible diversion points for mountain waters. And he authorised

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<sup>51</sup>W.P.P., "The Canadian Irrigation Surveys," A report by J. S. Dennis jr., to the International Irrigation Congress, Albuquerque, New Mexico, 1895, File No. 13.D.4.



reconnaissance surveys of the St. Mary's and Bow Rivers which were to locate the best location for large irrigation canals on these rivers. In less than two years these surveys had accounted for 223 miles of canal location, 1296 miles of elevations and levelling, 3811 miles for contour lines, and 44 detailed surveys of reservoir sites.<sup>52</sup> This information, along with stream flow data provided by 319 water measuring devices, augmented the information on the Department's maps of the Northwest.

Pearce and Dennis were also charged with devising a set of regulations for the administration of the irrigable areas. The system of licensing and Departmental investigations of proposed irrigation projects, which they created, was based upon the premise that frequent inspections would prohibit attempts at fraud. A sizeable fee of 1 cent an acre for the first 10,000 acres, and half that amount for the remaining acres up to a maximum of 100,000 acres, was to be charged for the initial survey license. If the initial surveys showed the scheme was impractical, and if the Departmental engineers agreed with the Company's findings, the license fee would be returned. If the Company found that the scheme was feasible, and they applied for permission to commence construction of the irrigation works, the amount of the survey fee would be deducted from the total costs of the land block. In order to prohibit speculation on anticipated increases in irrigated land values, the Department would insist

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<sup>52</sup>Interior Report, 1896, Part III, Irrigation.



that the irrigation project be completed within ten years, and the title of any lands unsold at that time would revert to the Government. If it appeared that prior to this deadline, the Company was not anxious to sell lands within the irrigation block, the Governor-General of Canada was empowered to sell the lands at auction. In addition, land sales were to be made on the ratio of 1 irrigated acre to 4 acres of pasture lands.<sup>53</sup> The water from the irrigated acres would enhance the value of adjacent areas by seepage and the raising of the water table of the region. Regulations were also provided to ensure that a minimum of 40 irrigated acres were granted to each settler for the support of his family through the growth of vegetables and crops. The frequent Department inspections at all stages of the construction of the irrigated works, as well as the method of land development within each project area, would make possible the maximum benefit of the region to the settlers of the West.

Pearce and Dennis believed that the hamlet system of settlement, which they had both witnessed in operation in the Mormon colonies in Utah, would provide the capability of increasing the population of the West sixfold. "It will readily be seen," wrote Pearce, "that a system of settlement suitable to a district having rainfall sufficient to bring crops to

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<sup>53</sup>W.P.P., "Colonization With Irrigation," File No. 14.D.7.



maturity is not suitable to one requiring irrigation."<sup>54</sup> The expense of constructing headgates, canals, and ditches could not be easily financed if large areas of vacant land existed amongst the irrigated plots. The more densely settled the irrigated region was, the lower the cost to the individual settler. Under the hamlet system the standard acreage for each settler would be 40 acres, which under intensive cultivation would produce as great, if not a greater, yield than the 160 acre farm of the dry farming system. In this way, Pearce hoped to reduce the cost to the individual settler to the point where it would seem negligible in the light of the profit gained on the increased yields. This system had been perfected in Utah, settled as it was by the Mormons far in advance of any other class of settler, and had been followed to a considerable extent by their settlement in southern Alberta.<sup>55</sup> The advantages of this system in social, religious, and educational matters could also be observed.

The two officials thought that the ideal hamlet should be based on the prospects of a greatly increased demand for dairy products. Water could be diverted to designated points on the prairie that would serve as focal points for the settlements. In the center of each hamlet the settlers could erect warehouses, grist

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<sup>54</sup>Ibid.

<sup>55</sup>Ibid., pp. 4-6.



mills, creameries, and loading platforms, as well as their institutional centers. In a circle adjacent to the central core, a sufficient acreage could be irrigated to provide for vegetable crops and winter forage for the cattle, which in summer could pasture on lands on the perimeter of the community. If the amount of pasture lands were to be calculated at a ratio of 4:1 of the irrigated lands, there was a possibility of the scheme encompassing 15 million acres of semi-arid lands in the West.

The ideal hamlet was considered to be composed of not less than thirty families.<sup>56</sup> Each family would require at least 300 acres of irrigated lands, to provide sufficient food for the support of a family for one year. With the irrigated lands the settler would also be required to purchase 400 acres of pasture which could support 30 cows. Thus at the expense of irrigating 3,000 acres for the benefit of the hamlet, an additional 12,000 acres of pasture lands would be disposed of for the maintenance of a community herd of 900 animals. And, as the community could be planned in a circular fashion, the pasture lands would be within easy walking distance for the cattle, no part of the pasture being more than 4 miles from the center of the hamlet.

The hamlet system could further be improved by combining seven communities lying within a six mile radius of each other.

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<sup>56</sup>The statistical data for the discussion on Hamlets has been taken from: W.P.P., "Hamlet System of Settlement Combined with Irrigation," File No. 13.E.7.



A large canal could be built to serve as a connecting link between the communities, providing a means of transporting produce to central processing plants. The combined herd would be in the neighborhood of 6,000 cattle which could produce twenty tons of butter every week for the urban markets of southern Alberta. In addition trade could be developed for pork, eggs, vegetables, and other agricultural products on an economical and efficient basis.

By 1897 there were 116 licensed irrigation projects, whose proposed area of irrigation was over 28,000 acres.<sup>57</sup> The flood of applications for stream diversion permits had been so heavy that Dennis had been unable to go to Ottawa in the fall to confer with the Deputy Minister of the Interior.<sup>58</sup> The onrush of proposals for irrigation projects was the result of desperation in the 9th year of the prairie drought. The optimism engendered by the heavy rainfall of 1884 had turned to pessimism as the dry cycle of years continued. Irrigation appeared to be the only answer to the rainfall deficiency factor. The propaganda campaign to acquaint settlers with the value and benefits of

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<sup>57</sup>Interior Report, 1897, Report of the Chief Inspector of Surveys, Part III, Irrigation, J. S. Dennis was appointed Irrigation Commissioner for the Department of Public Works with office in Regina in 1898. Besides control of stream diversion in the West he was also placed in charge of all the irrigation surveys.

<sup>58</sup>Interior Report, 1895, Report of the Deputy Minister, p. xvi.



irrigation, which Pearce had directed day in and day out since 1885, was at last successful. The campaign to achieve Government control of the limited water supplies of the western prairies had led to the enactment of the Northwest Irrigation Act, and with the recognition by the Federal Government of irrigation principles, irrigation farming had become respectable.

The sudden flurry of irrigation activity in Canada prompted the International Irrigation Congress to extend an invitation to the Canadian Government to send representatives to their annual meeting in Denver, Colorado. Pearce and Dennis were chosen to attend. The delegates to the conference expressed interest in the manner in which the Northwest Irrigation Act provided for the suppression of riparian water rights within the semi-arid regions of the Canadian West and for the provision for a system of Federal Government irrigation surveys. Both these measures were strongly endorsed by the Congress.<sup>59</sup> In the following year, 1895, Pearce and Dennis were accompanied to the Congress convention at Albuquerque, New Mexico by the Deputy Minister of the Interior, A. M. Burgess, and Mr. J. B. Lynch of the Federal Department of Agriculture. The papers presented by Pearce and Dennis<sup>60</sup> were particularly well received.<sup>61</sup>

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<sup>59</sup>Interior Report, 1894, Report of the Deputy Minister, xxi.

<sup>60</sup>W.P.P., An untitled address by Pearce to the International Irrigation Congress on Canadian Irrigation legislation; An address by Dennis to the International Irrigation Congress on Canadian irrigation surveys, File No. 13.D.4.

<sup>61</sup>Interior Report, 1895, Report of the Deputy Minister, xix.



The exchange of information concerning irrigation at these conferences was of great value in developing irrigation farming methods in the Canadian West.

Meanwhile in the Canadian West, the general feeling of elation and success among the westerners at having at last secured an answer for their problem of the drought, left unnoticed a statement written by the Deputy Minister in his annual report for 1895, which said, "an exceptionally heavy rainfall and cold weather had plagued the West that year." Irrigation projects were pressed forward frantically, despite the fact that "considerable damage done by early summer flooding by unprecedented floods"<sup>62</sup> had occurred in 1897. The return of the wet years dampened the hopes of the irrigators. They realised that settlers would not settle on expensive irrigation lands when there was a large quantity of virgin land available, capable of producing adequate crops by dry farming methods. By 1904, only the largest of the irrigation companies were still in operation, since the farmers had again turned to dry farming.

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<sup>62</sup>Interior Report, 1897, Dominion Lands, Report of the Superintendent of Mines.



## CHAPTER III

### THE CALGARY IRRIGATION COMPANY

The age of irrigation in southern Alberta might be said to date from 1893. It was in that year that serious efforts were first directed towards the promotion of large scale irrigation schemes on a sound financial basis through the investment of capital in chartered companies. Pearce estimated that prior to the emergence of the corporate interest in irrigation projects there had not been more than 500 acres of irrigated land.<sup>1</sup> He was convinced that the future development of the arid portion of the Territories was dependent upon the early introduction of comprehensive irrigation programs, which could divert river waters onto the barren lands, reclaiming them from their drought condition. The larger works, which could efficiently reclaim millions of acres of semi-arid prairie, could only be financed through large investment capital. Pearce doubted that the settlers residing on the plains would be able to finance the maintenance of irrigation ditches on their own lands, let alone meet the expense of costly construction.

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<sup>1</sup>W.P.P., "What We Are Doing in Regard to Irrigation in Alberta, Canada," A report to the International Irrigation Congress, Denver, Colorado, 1894, File No. 13.E.2.



Prior to the passage of the Northwest Irrigation Act in 1894, five companies<sup>2</sup> had sought incorporation by special act of Parliament for the purpose of utilizing the waters of the mountain rivers for irrigation or power projects. The only company that exercised its powers of stream diversion for irrigation purposes was the Calgary Irrigation Company. This Company performed the pioneer work done in southern Alberta in experimenting with large scale irrigation projects. The president of the Company was William Pearce, whose belief in the necessity and advantages of irrigation had encouraged him to promote his own irrigation company when attempts to involve others in irrigation projects had failed. Through the reclamation of lands unsuited even for stock grazing due to a lack of water, he hoped to visibly demonstrate to the general public the benefits of irrigation. He rationalized the impropriety of a civil servant becoming involved in private business ventures by pointing out that what he proposed would

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<sup>2</sup>Interior Report, 1895, Report of the Chief Inspector of Surveys, Dominion Lands, Part III, Irrigation, p. 21. The dates of incorporation of the other companies were: The Macleod Irrigation Company, 1891; The High River and Sheep Creek Irrigation and Land Company, 1892; The Alberta Irrigation Company, 1893; The Calgary Hydraulic Company, 1893. The Macleod and High River companies did not proceed beyond the stage of making initial surveys. The Calgary Hydraulic Company successfully diverted water from the Bow River in Calgary for the purpose of generating hydro-electric power until 1897 when heavy floods destroyed their works. The Alberta Irrigation Company was reorganized and refinanced several times until it became the Canada North West Irrigation and Land Company in 1896, at which time it successfully embarked on irrigation projects on the Lethbridge Plains.



be of great benefit to western Canada. He felt fully justified in using his money to promote the Calgary Irrigation Company when other monied interests had ignored his proposals, and he was certain the end results would fully justify the means used to achieve them.<sup>3</sup>

Pearce had initially tried to interest the manager of the Canada Mortgage Company of Winnipeg, A. M. Nanton, in committing his company to the construction of irrigation projects in the far West.<sup>4</sup> He pointed out that unclaimed, arid lands bordering Calgary could likely be obtained from the Canadian Pacific Railway at relatively cheap prices, then later resold when irrigation had enhanced their value. Pearce felt there were several possible irrigation projects capable of yielding 100% profit in the Calgary region alone. Although his motives were honest, in that he felt by encouraging irrigation for the semi-arid prairies he was doing something that would benefit the West,

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<sup>3</sup>As a member of the Dominion Lands Board, Pearce was restricted by law from engaging in real estate transactions. These restrictions were only waived in the event of a petition to purchase land for a residence, at which time the Minister of the Interior could grant special permission for the transaction. The point in question, concerning the impropriety of a civil servant becoming involved in private business ventures, is that the actions of a public official must not only be legal, but they must appear to be legal.

It is likely that Pearce had initially become involved in land transactions in 1882. In that year he financed, as a silent partner, a Mr. Lynch in the acquisition of several sections of land in the Winnipeg area. After his superannuation, Pearce appears to be the holder of several mortgages on land in the Calgary area, besides owning outright several acres of land within the city itself. The evidence for the above statements is to be found in several uncatalogued documents relating to the Pearce Mortgage Company.

<sup>4</sup>W.P.P., Pearce to A. M. Nanton, December 7, 1892, File No. 98.



he believed that he deserved 6% of the selling price of the lands as remuneration for his service in ensuring that the land would be made available to Nanton's company in a compact block.<sup>5</sup>

In this instance, as in others, the polite refusal of monied interests to become interested in his irrigation schemes was disheartening to him. Unable to convince others of the financial possibilities offered them by irrigation projects, Pearce decided to promote his own irrigation company. "When I went through the states and became interested with irrigation", he later wrote Dennis, "I did not anticipate that I was to become interested in the quest personally as a promoter and a stockholder in an irrigation company or apply water to my own land."<sup>6</sup> He was certain that the irrigation project he had in mind would be a financial success and that the obviously superior crop yields would bear witness to the value of irrigation techniques. The financial success of the project was necessary to arouse the interests of larger corporations in his ideas, and as he would be risking his own money in advancing the project he felt it only just that he should claim the profits. He did not consider that he would become involved in a conflict of interests between his participation in the Company and his position as a member of the Lands Board because he planned to remain a silent partner in the project taking no active part in

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<sup>5</sup>Ibid.

<sup>6</sup>W.P.P., Pearce to J. S. Dennis jr., March 28, 1894, File No. 13.E.7.



the Company's operation, a course of action he was not able to maintain.

The project Pearce had in mind was to construct a small, experimental irrigation farm in close proximity to Calgary so that people would be encouraged to visit the establishment and observe the artificial application of water to farm lands. He carefully selected 4,000 acres of semi-arid land adjacent to the C.P.R. tracks, south-west of Calgary. The region was fairly well settled by farmers who had been induced to take up lands there during the promising rains of 1884. Since that time the land had been relatively dry, and now the settlers seemed favorably inclined to experiment with irrigation. Pearce hoped that a daily train service between these lands and the larger urban centers of Calgary, Lethbridge, and Medicine Hat, would provide his Company with the means of creating a large enough trade in dairy products to make the experiment a financial success.<sup>7</sup>

His varied duties as Superintendent of Mines were time consuming, and necessitated an annual summer inspection tour of the Territories. He was thus unable to personally pursue the investigation of his project in the summer of 1892. During his absence from Calgary, he engaged the services of a local civil engineer, P. Turner Bone, to make a reconnaissance survey of the lands within his proposed irrigation project with a view to ascertaining the physical possibilities of the project. Bone

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<sup>7</sup>W.P.P., Pearce to P. T. Bone, July 29, 1892, File No. 13.C.5. See Map II.



was also to report on probable water diversion points along the south bank of the Bow River and to note if it would be possible to channel some of the water into Calgary for domestic purposes.<sup>8</sup>

"I have in mind", he told Bone, "a location which I think would be ideal and have been making enquiries regarding the price of land."<sup>9</sup> He envisioned water running down every street, thus encouraging a massive tree planting program which would make Calgary the forest city of the West. For the price of only \$1,000 he promised to place water on the highest point in the Calgary area, provided the owner of the land would plant trees in abundance.<sup>10</sup> "The more I look into it", he counseled Bone, "the more convinced I am that there is a great future for us along the foothills region in irrigation matters."<sup>11</sup>

After a searching examination of the data obtained in the summer surveys, Pearce decided to go ahead with his plans. He first sought permission of the Minister of the Interior for his proposals. In his petition to Daly, requesting Departmental approval of his plans, he carefully reiterated his reasons for involvement in a private business venture. He reminded Daly that the lands the Company would require had passed from the title of the crown many years ago, and thus he would not be

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<sup>8</sup>Ibid.

<sup>9</sup>Ibid.

<sup>10</sup>W.P.P., An undated, uncatalogued manuscript on the uses of irrigation.

<sup>11</sup>W.P.P., Pearce to P. T. Bone, July 29, 1892, File No. 13.C.5.



open to charges of land manipulations. The far West needed irrigation to save it from the disasters of a prolonged drought, and as all his attempts to interest others in such projects had been met with indifference, and as there seemed little chance that anyone else would initiate any irrigation works in the near future, he could see no reason why there should be any objection to his participation in such a project despite his position on the Lands Board. He was firmly convinced that irrigation was needed in the West, and he had already spent a considerable sum of his own money on initial surveys of the region, which should prove to all that he was acting in good faith, and not promoting a fraudulent land speculation scheme.<sup>12</sup> He concluded by explaining that he believed that the prospects of greater benefits to western farmers outweighed any adverse criticism that might arise. Daly duly granted his request.

Despite Departmental approval of his plans, Pearce realized his position was particularly vulnerable to charges of impropriety. He was at first inclined to remain a silent partner in control of the irrigation project in order to forestall the adverse criticism which he was certain would arise over the possibility of a conflict of interests between his public and private affairs. "I am seeking five names", he informed his

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<sup>12</sup>W.P.P., Pearce to A. M. Burgess, October 31, 1892, File No. 22.15.



nephew, "to head the Company prospectus but I want the number of shareholders small as I desire quiet control of the Company."<sup>13</sup> His plans to remain in the background of the Company affairs did not mature. When the public did not purchase Company stock, Pearce was forced to openly invest heavily in the hope of encouraging others to participate in a Company owned by a senior Government official. When this manoeuvre failed to sell Company stock, Pearce was forced to turn to his close friends and relatives for financial support.

Throughout the fall months of 1892, Pearce acted to clear away all possible opposition to his participation in private business. Abandoning the role of silent partner, he made a point of acquainting the public with his proposals by appearing at a series of public meetings in the capacity of the Provisional President of the Calgary Irrigation Company. At no time was opposition voiced to his ownership of the Company nor to his plans to divert water from the Elbow River onto the arid lands adjacent to Calgary.<sup>14</sup> Pearce took the public's indifference to his project as a sign of approval for his actions.

Called to Ottawa to prepare draft legislation for the Irrigation Act, Pearce was able to find enough time to seek incorporation of his interests under the charter of the Calgary

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<sup>13</sup>W.P.P., Pearce to Wm. Hespeler, December 1, 1892.

<sup>14</sup>The Calgary Herald, March 23, 1895.



Irrigation Company. The Charter was granted on the 1st of April, 1893 by Act of the Canadian Parliament. The express purpose of incorporation was to form a Company which would irrigate lands in the vicinity of Calgary and for this purpose a capitalization of \$100,000 was authorized. Pearce was listed as the Provisional President of the Company while P. Turner Bone was named as the Provisional Managing Director.<sup>15</sup>

The Calgary Irrigation Company was the first company to be incorporated in Canada for the sole purpose of conducting experiments in irrigation. Under the terms of its charter, The Company was to have its project completed within six years of the date that its construction plans were approved by the Department of the Interior. It was also provided that should general irrigation legislation be passed by the Government the Company would voluntarily place itself under the clauses of such legislation. In order to start immediate construction on the project, Pearce called up 20% of the value of the Company stock. The \$24,000<sup>16</sup> thus obtained enabled the provisional directors to authorize expenditures for the initial stages of construction.

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<sup>15</sup>W.P.P., A copy of the Calgary Irrigation Company's Act of incorporation with marginal notes by Pearce, File No. 13.E.2.

<sup>16</sup>W.P.P., A certified copy of the auditor's report of the Company, December 31, 1895, File No. 13.D.2.



The Company immediately started to acquire the rights to all the vacant lands lying within the proposed boundaries of the project. Within the project area there were a number of deserted homesteads which the Company wished to buy. These vacated lands lay across the path of the proposed main canal and the Company requested the Department to have the absent settlers' claims to these lands cancelled so that it might purchase them. The request was refused until Pearce used his influence to reverse the Departmental decision. He wrote to his old friend, and fellow member of the Lands Board, H. H. Smith, the Commissioner for Dominion Lands, explaining the situation to him. Smith replied that he "was unaware that you [Pearce] were [was] interested in the Company," and he promised that matters would be arranged to the satisfaction of the Company if Pearce would arrange to "furnish the Agent with a list of the lands" that were desired.<sup>17</sup> Up to this point, Pearce had acted in an ethically correct manner by keeping out of all Company business with the Government, but as the project progressed he found himself more and more involved with Company-Government relationships. His increasing involvement in Company affairs undoubtedly distracted him from the many duties of his Government office and was later to bring charges of impropriety against him.

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<sup>17</sup>W.P.P., H. H. Smith to Pearce, November 6, 1893, File No. 22.129.



His friendship with the senior officials of the C.P.R., and his intimate knowledge of their Land Department proved a further boon to the Company. Pearce was able to arrange the sale of 1,730 acres of relatively barren land from the Railway for the low price of \$2 an acre.<sup>18</sup> Pearce did not consider that he had used undue influence to acquire these lands because most of the lands involved were in dire need of water to make them valuable, and had remained unsold for a number of years. The C.P.R., he reported, seemed almost glad to have the administration of these lands removed from their jurisdiction.

The detailed engineering plans for the stream diversion construction and canal locations were filed with the Department of the Interior on June 23, 1893. The plans were examined by J. S. Dennis jr., who found them to be accurate and the project was given Government approval. At the time of approval, Dennis had commented on the precise nature of the plans and remarked that the care with which the project had been prepared indicated its future success.

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<sup>18</sup>W.P.P., W. Whyte to Pearce, January 11, 1894, File No. 13.D.2.; Pearce to P. Turner Bone, June 26, 1894, File No. 13.C.5 The terms of the agreement for the purchase of the C.P.R. lands was 10% down and an unspecified number of years to pay the remainder.



Shortly after the plans were approved and construction started, it was discovered that by building the Company's head-gates further upstream on the Elbow River a very much larger area could be commanded by the irrigation canals.<sup>19</sup> The additional cost of construction appeared to be negligible in comparison to the prospects of greatly increased revenue from the sale of water rental rights. Within the new area of 45,000 acres there were already numerous settlers who were willing to purchase water rights and to commence irrigation farming. The new scheme would provide the Company with a sounder financial footing with little additional expense. The prospects of large profits accruing from the new plan were welcomed by Pearce, for he reasoned that the greater the financial success of the Company, the greater were the chances of large corporations becoming interested in irrigation projects. In addition, the financial success of the Company would vindicate both Pearce's ideas concerning irrigation and his willingness to invest his own money in a project in which the general public had not been inclined to subscribe.

Approval for the new project was given the provisional directors of the Company at the first annual stockholders meeting on March 5, 1894.<sup>20</sup> The provisional directors were returned to

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<sup>19</sup>See Map II.

<sup>20</sup>At this time there were only five shareholders: Pearce, his wife Margaret, his sister Louisa Meyers, his cousin Jephson, and Bone.



office and their actions in the past year in authorizing expenses for construction of the irrigation works were approved. The auditor's report showed that \$2,630 had been spent on surveys, \$2,902 on financing the Company's charter, \$3,250 on land purchases, and \$10,491 had been allocated for headgate and canal construction.<sup>21</sup> The shareholders also recommended that the President, William Pearce, be given authority to proceed to Ottawa to negotiate the required amendments to their charter to legalize the larger project plans. The shareholders felt that due to his senior position with the Government and the influence he exerted over members of the Department of the Interior, he would be the one most likely to be successful in presenting their case for Parliament's approval. In any case, Pearce was the only choice as two of the five shareholders were women, Bone was needed to manage the construction work, and the other shareholder could not find the time to leave his business to travel to Ottawa to present the Company's petition.

The shareholders were not disappointed with the outcome of their President's accomplishments. The new charter for the Company secured far more rights than they could have hoped for.<sup>22</sup>

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<sup>21</sup>W.P.P., A copy of the auditor's report, December 31, 1895, File No. 13.D.2.

<sup>22</sup>These rights were later included in the North West Irrigation Act for the benefit of all irrigation companies.



The Company was granted the right to use water in its canals for hydro-electric purposes, provided that the water would be returned to the canals for irrigation and not wasted. Permission was granted the Company to construct telegraph and telephone facilities on its lands for an internal communications network. The time limit on completion of the engineering works was lengthened from six years to ten years after the date of initial construction, and to meet the added costs of the new scheme the Company was permitted a \$200,000 capitalization.<sup>23</sup>

With the authorization for a larger capitalization, the Company decided to send Bone to Scotland for the purpose of raising the necessary funds for the completion of the irrigation works. Bone was thought to have connections with the monied interests in Scotland through his relatives and the expectations for a successful journey were great. For his trip to be of value it was estimated that he would have to sell at least \$40,000 worth of stock, which would enable the Company to extend their main canal to the point where irrigation could be commenced. Until his return, a further 20% of the face value of the Company's stocks was called up.

Pearce filed the revised construction plans with the Department and applied for an increase in stream diversion authorization from 300 to 500 cubic feet of water per second (cfs). The application stated that the Company considered there to be

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<sup>23</sup>W.P.P., A copy of the ammended charter with marginal notations by Pearce, File No. 13.D.2.



approximately 40,000 acres capable of being irrigated above their headgates, which would not require over 400 cfs for any future irrigation project from the Elbow River in that region. As the average flow of the river was 1,500 cfs during the irrigation season, May to June, there would always be 600 cfs of water available for downstream purposes, continually flowing past the Company's headgates. In this way, those above and below the Company's works would be guaranteed enough water for domestic purposes.<sup>24</sup> Pearce did not consider the increase in stream diversion to be detrimental to any other interests.

When Pearce filed the revised plans with the Department unexpected opposition arose from a group of settler-ranchers living on the north shore of the Elbow River across from the Company's headgates. The settlers feared the increase in stream diversion would leave insufficient water in the Elbow River for their own irrigation proposals. Alarmed at what appeared to be the suppression of the riparian rights to water flowing past their doorsteps, over 100 of the settlers organized themselves into the Springbank Irrigation League for the purpose of promoting their own project and as a means of preventing the Company from obtaining complete control of the river water.

The Springbank settlers had organized themselves into an Irrigation District in anticipation of the passage of the Northwest Irrigation Ordinance which C. A. Magrath had promised

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<sup>24</sup>W.P.P., Pearce to P. T. Bone, May 12, 1894, File No. 13.C.5.



to bring before the Legislative Assembly in August.<sup>25</sup> Under the proposed legislation, groups of settlers were given permission to incorporate themselves into a legal entity for the purpose of raising funds through the sale of stock to finance irrigation works. The settlers were to be permitted to mortgage their lands to a maximum value of \$6 per acre, and a district engineer would be appointed to not only arbitrarily apportion the waters but to set the annual tax rate of the district.<sup>26</sup> The Irrigation Ordinance received the approval of the Territorial Assembly in the fall of 1894, and was forwarded to Ottawa for Federal Government approval.<sup>27</sup>

The Springbank settlers filed a counter claim to the Company's application for increased stream diversion rights. The Springbank project involved the use of 210 cfs of water for the purpose of irrigating 21,000 acres of barren lands to the north of the Company's headgates. The Department of the Interior asked Dennis to make a study of both the Company's project and the Springbank scheme for the purpose of ascertaining which of the proposals should be given Departmental approval.<sup>28</sup> The Department realized that under the Northwest Irrigation Act

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<sup>25</sup>W.P.P., Pearce to C. A. Magrath, n.d., File No. 13.A.1.

<sup>26</sup>W.P.P., A copy of the proposed Ordinance with marginal notations, File No. 13.D.2.

<sup>27</sup>The (Regina) Leader, "Legislative Assembly, "September 13, 1894.

<sup>28</sup>W.P.P., A copy of Dennis' report to the Department of the Interior, November 13, 1894, File No. 13.D.2.



riparian rights to water had been suppressed and that priority rights for stream diversion were to be granted to the initial user. The Company's position was legally impregnable, however, there was a strong possibility that there would be enough water in the Elbow River for both projects. The possibility of approving both projects was highly probable provided it could be shown that both would be of value in improving the condition of the arid lands adjacent to Calgary.

The Department hesitated in making its decision. The position of the Superintendent of Mines was particularly vulnerable to attack on the grounds of his involvement in private business as the President of the Company, and it was feared that a public debate would prove embarrassing to the Department. A second reason for caution in making a choice between the two projects was that the staunch western Conservative, Senator Lougheed, had been engaged by the Springbank League to represent them as their legal counsel. The prospects of offending the local Conservative Associations in southern Alberta by deciding against Lougheed did not appeal to the Minister of the Interior.

In his report Dennis compared the two proposals from an engineering and legal standpoint. The Company had acquired barren land which would remain in that condition unless water were applied to it. The only source of water for the Company lands was the Elbow River, while the plans filed by the Company were sound and the project was judged physically possible. In



addition, under the Northwest Irrigation Act, the Company had legal claim to priority rights of stream diversion.<sup>29</sup>

The Springbank project was found to have another source of water in the Bow River, although such a diversion would necessitate longer canals and increase the cost of the project accordingly. Dennis was also concerned over the proposals made by the District to finance their project as he felt that the \$6 per acre maximum mortgage permitted the settlers on their lands would not pay for the cost of construction. Finally, as the Irrigation Ordinance had not received Federal Government approval, the District had no legal existence, requiring that their proposal be rejected.<sup>30</sup>

The decision to approve the Company's application was based on the report by Dennis. Political overtones had delayed the approval of the Company's plans but it appeared that the delay had proven advantageous in that a precedent had been set for the suppression of riparian rights as provided under the Irrigation Act. The Government had shown its willingness to abide by the clauses of the Act, in spite of the pressure brought to bear on it by Senator Lougheed, with a view to proving to businessmen who were watching the outcome of the controversy that it would not be swayed by popular opinion.

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<sup>29</sup>Ibid.

<sup>30</sup>Ibid., On the disallowance of the Ordinance, see below, pp. 78, 82.



The influence that Pearce exerted over the senior officials of the Department was of great value in the conflict. He not only anticipated every move the Springbank settlers would make, but he informed the Minister of the Interior what reply the Department should make. "Now what you are going to say to this", he counseled Daly, "is what I have been puzzling my brain about. I think you might say...".<sup>31</sup> When possible he pointed out the weaknesses in the District's application and was responsible for directing Departmental investigation of the League's financial difficulties.

Pearce was impatient with the delay caused by the League's application. Bone had been unable to interest his financial contacts in Scotland in the Company's scheme while the two applications were before the Department. Although he had been unofficially informed that the Company would have their petition granted this knowledge was of little use in obtaining capital from financiers who would not act until a public statement concerning the applications had been made. A further delay in approval of the Company's application was caused by the death of the Prime Minister, Sir John Thompson, which caused great confusion in government circles.

The conflict between the Company and the Springbank district was renewed when news was received that the Federal Government had disallowed the Irrigation Ordinance. The Calgary

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<sup>31</sup>W.P.P., Pearce to T. M. Daly, February 27, 1895, File No. 13.D.2.



Tribune launched an intensified attack on Pearce whom it blamed for the failure of the Ordinance to receive the approval of the Governor General in Council. The Tribune accused Pearce of using his influence to have the Ordinance disallowed so that the Springbank Settlers would not have any legal status in their application to divert water from the Elbow River, leaving his Company in sole control.<sup>32</sup> The fact that the Ordinance had not been disallowed but had been sent back to the Territorial Assembly for revision was overlooked by the Tribune in its efforts to attack Pearce. The renewal of the conflict came at an inopportune time for Pearce in that he was already deeply involved with charges of manipulating stock reserves brought against him by Frank Oliver.

The Tribune opened its attack on Pearce with several sensational charges. The Superintendent of Mines was accused of holding a well paid Government office and yet spending most of his time in looking after the affairs of his own irrigation company. If, argued the paper, the Government saw fit to pay him an annual salary of \$3,200 he should not have time for any other work than his heavy duties. The paper noted that he had travelled to Ottawa where he had been granted \$3.50 a day in expenses, all at the country's expense to help the passage of incorporation acts for his company. In addition Pearce was

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<sup>32</sup>The issues of the Calgary Herald and the Calgary Tribune between February 22 and March 30, 1895 are filled with editorials, which are highly colorful and at times libellous, on the subject of the dual applications.



accused of having used government stationary, typists, and typewriters for Company business.<sup>33</sup>

In another editorial Pearce's methods of acquiring land for his company were questioned. How, asked the paper, could he as a member of the Lands Board indulge in real estate transactions? and what influence did he exert on his colleagues to enable him to buy school lands for his estate in south-east Calgary? "Pearce", concluded the paper, "has his position and ignores the law."<sup>34</sup>

Pearce did not consider that he had acted in an improper manner. His actions, he knew, had been unusual, but, they had the full approval of Parliament. And as he had stated so often in the past, the results of his experiment would far outweigh any criticism of the means he was using to achieve success.

He did not openly reply to the Tribune's charges, in the hope that this unpleasant incident would soon be over. Instead, he chose to state his case to the members of the Department and to Parliament by means of a private letter which, he believed, would gain him powerful support. He documented his case for the Members of the House of Commons and the Members of the Senate, hoping that he would thus avoid becoming embroiled in public debate.<sup>35</sup>

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<sup>33</sup>The Calgary Tribune, February 22, 1895. The entire issue was devoted to question Pearce's propriety in the Springbank affair under such headlines as: "Pearce vs. People"; "Act"; "Has Calgary a Conscience"; "Pearce Must Go".

<sup>34</sup>Ibid.

<sup>35</sup>W.P.P., Pearce to J. Sutherland, M.P., May 15, 1895, File No. 13.D.2.



Pearce claimed the attacks made upon him were unfounded and unjustified. He claimed that he had never done Company business on Government time, although it was true he had done some Company business while drafting the Irrigation Act, but this had been accomplished on the weekends and in the evening. This work had been done without prejudice to his efforts to prepare irrigation legislation. He readily pointed out that in his twenty-two years of Government service he had never permitted his personal affairs to interfere with his duties as a civil servant. For every hour spent in promoting his own business he had calculated that he had spent over three thousand hours in Departmental work, much of this in overtime for which he was not given credit. Any use he may have had of Government equipment, he stated, would not likely amount to two-thirds of a cent and what Government stationery he had inadvertently used he would gladly replace.

In reply to the second charge of improper conduct in participating in real estate transactions, Pearce explained that all his dealings had had the approval of Parliament. The lands he had helped acquire for his Company were valueless from want of water, and would have remained that way unless he had saved them. The school reserves that he had purchased for his estate had first been sold to Calgary for use as a cemetery, and only when it was found the lands were too sandy for the purpose required of them, had he been able to buy several acres. In every case the title to the lands had long since passed from the control and ownership of the Crown. The Company had expended a



considerable amount of money in making surveys and in starting construction of the irrigation works, showing that the implication of a speculative land scheme was simply untrue. If it were true that the scheme was speculative in nature, as the Tribune had charged, he wondered why the paper had not bought a large number of Company shares to partake in the huge profits Pearce and his relatives were accused of making. In any case, he continued, he would gladly sell all of his interests in the Calgary Irrigation Company to anyone who would offer him a fair market price for them.

The accusation that he had exerted undue influence on the Government to have the Irrigation Ordinance disallowed, in order to prevent the Springbank League from applying for water rights on the Elbow River was also answered in his letter. He pointed out that he had been asked to peruse the Ordinance and to send his comments on it to the Minister of the Interior, however, the final decision to refer the legislation back to the Territorial Assembly had been made by the Department of Justice which had found many of the clauses ultra vires.<sup>36</sup>

When Pearce did not immediately become involved in public debate the Tribune attempted to exert further pressure on him by enlisting the support of the Calgary Conservative Association. Through the Springbank League's legal counsel,

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<sup>36</sup>Pearce's criticism of the Ordinance was centered about the clauses granting arbitrary tax powers to District Engineers. He also felt that maximum limits to the total amount of money a District would be permitted to borrow should be set. These suggestions were met in the revised Irrigation Ordinance of 1898.



Senator Lougheed, the paper hoped to be able to induce the local Conservatives to petition for Pearce's removal from the civil service. If, threatened the paper, the Conservatives would not help the unfortunate settlers they would see their support on the prairies wane.

The silence of the Superintendent of Mines in the face of the charges brought against him aroused questioning attitudes among the general public. Burgess wrote Pearce suggesting that "the public felt the Company was the personal property of the Superintendent of Mines which left a bad impression."<sup>37</sup> A certain amount of odium emanating from the dispute was certain to cling to the Department, continued the Deputy Minister. He concluded by warning Pearce that his "office must have no shadow of a doubt of impropriety."<sup>38</sup> He asked Pearce to send him a statement of his status with the Calgary Irrigation Company, and an explanation of his responsibilities towards the Company.

Pearce assured Burgess that he had acted throughout in an ethical manner. "If I were dishonest," he argued, "I would not have let my name come forward...nor come forward at my own risk to start something new to help solve a problem."<sup>39</sup> He had created the Calgary Irrigation Company in the vacuum of public

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<sup>37</sup>W.P.P., Burgess to Pearce, November 7, 1894, File No. 13.D.2.

<sup>38</sup>Ibid.

<sup>39</sup>W.P.P., Pearce to Burgess, November 13, 1894, File No. 13.D.2.



apathy and indifference to irrigation projects and he could see no reason why he should be forced out of the Company at this point. "The Tribune", stated Pearce, "was wide of the mark and ignorant of the facts."<sup>40</sup>

Burgess' request for a statement of his position shook Pearce from his complacency. In an effort to gather support for what now appeared to be a dangerous situation, Pearce asked the settlers on the Company's lands to send petitions to the Department outlining their need for irrigation in comparison to that of the Springbank League. The petition of U. P. Pratt called attention to the need for irrigation to ensure the future prosperity of the people living south-west of Calgary who, owing to a series of dry years, had found farming to be unprofitable if not impossible in the present conditions.<sup>41</sup> He also signed the petition of a neighboring farmer which added that a number of farms were being abandoned in the Fish Creek area after the fifth consecutive year of the drought. Still another petition underlined the necessity for immediate action stating that "property was being abandoned due to the lack of water and ...would revert to its former uncultivated state"<sup>42</sup> unless the Company were permitted to continue with its project.

Concurrent with the attempt to inundate the Department with petitions favorable to the Company, Pearce made public his

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<sup>40</sup>W.P.P., File No. 13.D.2.

<sup>41</sup>Ibid.

<sup>42</sup>Ibid.



analysis of the Springbank plan. He discovered that of the 21,000 acres the League proposed to irrigate only a little more than half would actually benefit from irrigation. Besides the steep gullies and rocky ridges which criss-crossed the Springbank area, thus reducing the irrigable area to 14,000 acres, 1,230 acres were school lands, 3,150 acres were unclaimed, and the remaining lands were heavily mortgaged to the C. P. R. It was obvious from these statistics that a maximum mortgage of \$6 per acre, as permitted under the proposed Ordinance, could realise only \$84,000, far below the proposed costs of their scheme.<sup>43</sup>

The delay in obtaining a definite commitment from the Government was proving costly to the Company. Construction was being held up and investors would not purchase Company stock until the Department made its decision. An offer to share the apportionment of the river on a pro rata basis of the amount of lands proposed for irrigation had been turned down by Lougheed when he discovered that Pearce had included 12,000 acres of lands capable of irrigation on the Sarcee Indian Reserve in his offer. Pearce believed that these lands would have an enhanced value, despite the fact their title would remain with the Crown, and as such should be included in any compromise diversion. The refusal of the settlers to accept any compromise forced the

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<sup>43</sup>W.P.P., A memorial to the Secretary of the Department of the Interior, March 29, 1895, File No. 13.D.2.



Government to act, as it was obvious that a decision would now have to be made between the two applications.

Lougheed was informed of the Government's decision to approve the Company plans in a telegram from the Minister of the Interior. "It is unfortunate", wired Daly, "that political backing was given the Springbank case in what was strictly a legal and Departmental decision."<sup>44</sup> He ordered the local Conservative Association to stop interfering in a non-political issue. He stressed the point that the decision to approve the application for stream diversion from the Company had been based on a careful comparison of the two applications by Department engineers. "The claims of the Springbank League would be valid," he concluded, "only in the event of the Company defaulting its priority rights."<sup>45</sup>

Pearce warned Daly that "there will be a vigorous kick all directed at the report"<sup>46</sup> that Dennis had submitted. He further advised the Minister that if the Company were attacked for its insistence on the right to irrigate Indian lands, he was to say that they deserved irrigation as much as any other lands. He wired his appreciation to Daly for the "vigorous and conclusive

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<sup>44</sup>W.P.P., A copy of the telegram from T. M. Daly to Lougheed, n.d., File No. 13.D.2.

<sup>45</sup>Ibid.

<sup>46</sup>W.P.P., Pearce to T. M. Daly, March 9, 1895, File No. 13.D.2.



defense"<sup>47</sup> the Department had given him. "Lougheed", he continued, "must have lost his head in involving a political party in a legal decision."<sup>48</sup> He concluded by stating that "Lougheed says the letter shows you are ignorant of the subject."<sup>49</sup>

Although the Department had vindicated the actions of their Superintendent of Mines, it was not willing to approve any further actions that Pearce might make in his participation in private enterprise. Burgess informed Pearce that he would have to divorce himself from all matters associated with the Company for the good of his Government position.<sup>50</sup> He was to sell his shares of the Company stock as soon as possible, and to dissolve his bond with the Company immediately.

Pearce was unsuccessful in his attempts to sell his shares. His friends and relatives were financially unable to purchase further quantities of stock. He wrote to Nanton in Winnipeg asking if he would undertake to relieve him of his stock, but Nanton did not avail himself of the opportunity.<sup>51</sup> By the end of the summer, although Pearce had severed his administrative connection with the Company he still had considerable amounts of stock remaining.<sup>52</sup> When the Company

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<sup>47</sup>Ibid.

<sup>48</sup>Ibid.

<sup>49</sup>Ibid.

<sup>50</sup>W.P.P., Pearce to Louisa Meyer, July 3, 1895, File No. 13.A.1.

<sup>51</sup>W.P.P., Pearce to A. M. Nanton, August 6, 1895, File No. 13.D.2.

<sup>52</sup>W.P.P., Pearce to Louisa Meyer, June 1, 1895, File No. 23.3.



declared bankruptcy in 1907, Pearce and members of his immediate family were still in possession of \$40,000 worth of stock.<sup>53</sup>

He thought his leaving the Company might have been a blessing in disguise in that he felt he could do more for it from the Government side. The Company was reorganised under the direction of P. A. Prince, Manager of the Eau St. Claire and Bow River Lumber Company, who had bought a portion of Pearce's stock.<sup>54</sup> Mr. A. E. Cross, Manager of the Calgary Brewing Company, also came into the Company at this time. The new directorship had no connection with Pearce outside of their common financial relationship within the Company.

He did not consider it just that he should be made to leave the Company at the moment when the irrigation canals were nearing completion and his presence would be required to help plan the sub-division of the project's lands. He could not understand why the public did not consider his actions legal when he had taken such pains to obtain Government approval for what he did, and it was difficult to bear the loss of his Company for actions which to the public did not appear morally right. From this point on, Pearce was very careful not to become privately involved with irrigation matters.

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<sup>53</sup>W.P.P., A file containing financial reports from the Company, File No. 13.D.5.

<sup>54</sup>W.P.P., Pearce to T. M. Daly, June 22, 1895, File No. 13.D.2.



The first large scale irrigation project in Canada commenced operation when the Company began irrigating in the fall of 1895;<sup>55</sup> by 1896 over 15,000 acres had been placed under water. The new management had activated over 60 miles of main canal to the cheers of settlers on the project lands. In opening its irrigation ditches, the Company became the first chartered company in Canada to commence irrigation.<sup>56</sup> The prospects were good for the future success of Pearce's brain child, and plans were being made for a further extension of canals and lateral ditches in the following years.

However, the return of the wet years in 1896 saw the Company enter a period of decline ending in its demise. Settlers who had welcomed the river waters in the dry years were unwilling to pay for water rental rights when they did not require them. The continuing desertion of the principles of irrigation by the settlers was fatal to the financial stability of the Company. Pearce later said that if the farmers had been iron bound by legal contracts stipulating a yearly water rental, whether the water was needed or not, the Company would have been able to make interest payments on its bank loans and thus have survived until the return of the drought. The success of dry farming

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<sup>55</sup>A. James Hudson, Ora Card: Pioneer and Colonizer (Cardston: by the author, 1963), p. 139. The Mormons opened their "Pioneer Ditch" July 28, 1896. See below p. 105.

<sup>56</sup>Interior Report, 1896, Part III, Irrigation, p. 72.



methods after 1896 saw settlement spread to the virgin lands on the prairie, as the number of irrigators rapidly declined.

The rains of 1897 dealt another blow to the Company by severely damaging the headgates on the Elbow River. The same flood completely washed away the works of the Calgary Hydraulic Company, leaving the Calgary Irrigation Company as the only one of the original five stream diversion companies in operation. In an effort to maintain financial stability the Company stopped all new construction, and was active only in maintaining the ditch patrols necessary to ensure the safety of the canals. By 1900 the Company was able to show a gross profit of only \$400, barely sufficient to maintain the sixty miles of canals.<sup>57</sup>

Efforts were made on behalf of the Company to secure Government aid. Bone advanced proposals to establish experimental dairy farms on the Company lands, or to maintain Departmental water measuring stations on the Bow River, provided the Department would give them the required financial assistance. The proposals of the Company were recommended to Sifton by Senator J. H. Ross, a former member of the Territorial cabinet. "I know from personal experience that this company has done a great deal towards advancing irrigation in the Territories, and it will be a serious blow if it fails",<sup>58</sup> Ross told the Cabinet. However, no Federal aid was forthcoming,

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<sup>57</sup>G.F.A., "Pioneer Irrigation Development in the Bow River Basin, 1895-1920, "A report to the Glenbow Foundation by Lawrence Burns, July, 1960, p. 170-179.

<sup>58</sup>Ibid., A copy of a letter from J. H. Ross to C. Sifton, November 3, 1898.



and by 1906 the canals had fallen into an unsafe condition.<sup>59</sup>

The Company was dissolved on March 16, 1907, by W. Toole, who was appointed as the liquidator. In October of that year, John Stewart, Commissioner for Irrigation, cancelled the Company's charter for non-compliance with the clauses dealing with the completion of the project within the ten year time limit.<sup>60</sup> At the time of its demise, the Company was operating 54 miles of canals, capable of irrigating 7,000 acres, for only 6 farmers.<sup>61</sup>

Pearce had been one of the first persons to benefit from the Company works. Irrigation ditches reached his estate in south-east Calgary on the 3rd of October, 1895. (See Map I). He planned to establish a 35 acre experimental station on the lands adjacent to his home. On these lands he promoted several experiments in irrigation farming techniques in an effort to acquaint the public with irrigation practices. Oats, peas, beans and cereal crops were placed under irrigation and detailed records of crop yields were kept for comparison to that obtained by dry farming techniques. In 1901 he added 30 head of cattle in order to show how a small amount of irrigated land could

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<sup>59</sup>Ibid., No reasons were given for the refusal of Government grants, pp. 370-373.

<sup>60</sup>Ibid.

<sup>61</sup>W.P.P., A file containing data on irrigating his estate, File No. 13.D.5.



support significant livestock production. The herd was sold at a profit of \$50 a head in 1903 when the stable boys could no longer stand his gruff manners.

Pearce was continually sending reports to Dennis about the prosperity of his farm. The floods of 1897 damaged his irrigation ditches, and a gap 160 feet long was torn through the embankment of the Calgary and Edmonton Railroad, which crossed his land, permitting the invasion of the river waters to drown his experimental plots. But, Pearce calculated that the control of the water applied to his land for the remaining growing season by means of irrigation ditches had been of value to his crop. In the floods over 500 baby spruce which he had obtained from experimental farms across North America were lost.<sup>62</sup>

In the latter years of the Company's life, Pearce was unable and unwilling to render it assistance. "In the case of Frank Oliver," he wrote Bone, "I may be the red flag to the bull."<sup>63</sup> He advised the new Directors to further their attempts to obtain Government grants. Failing this he suggested the Company be re-incorporated as an experimental farm or the Company could make the smaller shareholders contribute additional sums. When the Company declared bankruptcy Pearce was not one of the remaining 6 irrigators using the Company's water.

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<sup>62</sup>W.P.P., Pearce to Dennis, January 28, 1898, File No. 13.D.2.

<sup>63</sup>W.P.P., Pearce to Bone, February 18, 1901, File No. 13.D.2.



In promoting public interest in irrigation and in acquainting the westerners with the technique of irrigation farming, the Calgary Irrigation Company had been an unqualified success. On the Pearce estate crop yields averaged 70% above those produced by his neighbors using dry farming methods.<sup>64</sup> In addition, the increased production from previously barren lands bore witness to the advantages and benefits that could be obtained from the reclamation of the arid soils.

The initial success of the Company encouraged larger corporations, such as the Canadian Pacific Railway to investigate the possibilities of investing in still larger irrigation projects embracing millions of acres. The larger corporations were willing to purchase irrigable lands when their price was low, construct irrigation works on the lands, and then in years of drought sell them at enhanced values. Much of the credit for educating the public, and making the West aware of irrigation farming methods, belongs to Pearce and his Calgary Irrigation Company.

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<sup>64</sup>W.P.P., A file containing statistical data on the irrigation of the lands of the Pearce Estate, File No. 13.D.9.



## CHAPTER IV

### THE CANADIAN PACIFIC RAILWAY IRRIGATION BLOCK

The idea of a great irrigation project drawing water from the Bow River originated in the mind of William Pearce. His bold project, developed during the twelve year drought from 1884 to 1896, departed sharply from the prevailing homestead system of land settlement in that a large tract of land would be placed under a comprehensive master development plan. Under a master control plan sections of the area could be progressively opened to settlement as the need for new lands arose. In effect, this would increase the density of population in a region lessening the per capita cost of expensive irrigation works. Also, by developing irrigation works gradually as various areas were opened for settlement the scheme would be more efficient than if a scattered pattern of settlement were permitted. Pearce believed that the logical corporate body to initiate such a scheme would be the Canadian Pacific Railway. He urged officials of the C.P.R. to receive the remainder of their Government land grant in a compact block of approximately three million acres for the purpose of constructing an irrigation project. The region he proposed the Railway might be interested in investigating lay adjacent to the C.P.R. main line tracks, north of the Bow River and between Calgary and Medicine Hat. He further suggested that the Railway could expect to receive the greatest profit



from the scheme through an increase in traffic from a more densely populated area, rather from land sales which he hoped the C.P.R. would keep at a minimum purchase price.

Pearce was well known to the officials of the C.P.R. His duties as a member of the Dominion Land Board continually brought him into close contact with the railwaymen. He was the official who investigated, reported, and registered the land grant of the Company under the terms of the C.P.R.'s charter. It had been on such an investigation that he had first visited Calgary in 1883, and after that time he became almost exclusively engaged in investigating the state of the lands rejected by the Company as unfit for settlement.<sup>1</sup> His fairness and accuracy in assessing the value of rejected lands earned him the respect of the Railway officials.

In 1895 Pearce was appointed to the Railway Freight Rates Commission by the Department of the Interior as an expert on western development. He protested his appointment as he feared that the public would brand him a C.P.R. tool if the Commission findings favored the Company. Despite his open friendship with the railway officials, the Department confirmed his appointment because of his exhaustive knowledge of the West which he had gained from his inspection trips across the prairies.

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<sup>1</sup>Under the charter of the Canadian Pacific Railway, the Company did not have to accept lands they considered as unfit for settlement as part of their land grant. The Government charged Pearce with the duty of evaluating the Company's assessments of these lands.



His knowledge of western conditions was far more valuable than any adverse publicity he might be subjected to. His fears proved correct, for he was called a C.P.R. tool when the Commission brought down its report, which found that no complaints against the Railway were valid.<sup>2</sup> However the officials of the Government and the Railway had been greatly impressed by his impartiality while a member of the Commission.

In the following year, as a result of his work with the Commission, Pearce was asked by the President of the Railway, Sir William VanHorne, to carry out an independent survey of lands the Railway was interested in acquiring close to Bismark, North Dakota. He was hesitant about accepting such an offer which would involve a senior Government official being required to perform an independent assessment of lands in another country. Had he not recently been chastised for much the same thing in connection with his involvement in the Calgary Irrigation Company? He did not wish to add to his or the Department's discomfort at this time. VanHorne brought extreme pressure to bear on the Minister of the Interior to release Pearce from Department duties to enable him to carry out the required land evaluation. His will prevailed, and Sifton ordered Pearce to accept the offer which was to be carried out during Pearce's annual holiday time. That summer

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<sup>2</sup>W.P.P., Pearce to T. M. Daly, May 13, 1895; Pearce to T. M. Daly, June 11, 1895, File No. 25.A.8. The other two members of the Commission were P. S. Archibald, Chief Engineer of the I.C.R.R., and W. H. Allisen, Homestead Inspector.



Pearce visited the United States, supposedly on a three week sight-seeing trip but in reality on a land evaluation assignment for the C.P.R.<sup>3</sup>

His friendship with VanHorne had begun in 1883. Sir William had travelled over the tracks of the C.P.R., to the end of the rails near Holt City<sup>4</sup> in the Rocky Mountains. A fresh blanket of snow carpeted the peaks and in the crisp November air the beauty of the mountains greatly impressed his artistic nature. No doubt VanHorne recalled the recommendation made him by Sanford Fleming concerning the establishment of a National Park system to preserve the beauties of the Rocky Mountains, after the engineer's trip through Rogers' Pass in 1883.<sup>5</sup> Returning to Winnipeg, VanHorne invited a William Pearce, the recently appointed Inspector of Land Agencies and a member of the Dominion Lands Board, to be his supper guest and to discuss the possibilities of reserving scenic spots in the mountains for public parks. Pearce became a frequent house guest at the VanHornes' and often discussed the establishment of a national park system with the President of the Railway. In subsequent years, when his office had been moved to

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<sup>3</sup>W.P.P., W. M. VanHorne to Pearce, n.d., File No. 14.A.7.

<sup>4</sup>W.P.P., "History of Western Lands," File No. 9.12. Holt City was named after a Winnipeg contractor for the C.P.R. and has since been renamed Lake Louise.

<sup>5</sup>Sanford Fleming, England and Canada: A Summer Tour Between Old and New Westminster (London: Sampson Low, Marston, Searle & Rivington, 1884), p. 415. Fleming recommended the establishment of two parks, one in the Rocky Mountains near Rogers' Pass, the other north of Lake Superior at Lake Nipigon.



Calgary, Pearce often stayed at the VanHornes' when passing through Winnipeg.

As a result of Sir William's prodding, survey parties were despatched to the Banff region to attempt to define and locate the more scenic places. The reports of the beauty of the mountains from the surveyors enticed Pearce to make an inspection tour of the area in the fall of 1885. Arriving at Banff, he found that the hot springs and caves were across the Bow River from the C.P.R. tracks. His trip across the Bow River was made on a raft consisting of railway ties held together by wire and piloted across the river by a Mr. O. Keefe, who had permanently "borrowed" the material for his raft from the Railway construction crews. The descent into the caves and the hot springs was even more distressing in that the ladder which permitted entrance to the caves was made from old trees whose branches had been cut off to form a natural ladder.<sup>6</sup>

It was as a result of this trip that Pearce recommended the creation of a park reservation to the Lands Board. The first reservation for parks was made by Order-in-Council November 25, 1885. The regulations that Pearce drafted for the use of the hot springs in the Banff area were modeled after those in force at the hot springs in the State of Arkansas. The following year

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<sup>6</sup>W.P.P., "Establishment of the National Parks in the Rocky and Selkirk Mountains," An address to the Historical Society of Calgary, December 16, 1924, File No. 19.12.



a ten square mile park reservation was created close to Mount Stephen on Pearce's recommendation. In later years he played an important part in making parkland reserves at Waterton and Glacier. Recognition for his services in establishing the National Park System came to Pearce in a letter of commendation sent him in 1925 by the Deputy Minister of the Interior, W. W. Cory, which stated in part that, "everyone here recognises the importance of the work you did in the early days in connection with the establishment of the National Parks: and appreciates the vision you showed at that time."<sup>7</sup>

The origin of what was to become the largest and most comprehensive irrigation project on the North American Continent for its time sprang from an investigation made by Pearce and William Whyte, General Superintendent of the C.P.R., into the source of water supplies for steam engines along the main line of the Railway between Calgary and Medicine Hat.<sup>8</sup> It was difficult to obtain large supplies of water for the locomotives east of Calgary. Pearce discovered that by placing a dam on the Bow River near Bassano the river water could be diverted to water towers along the railway tracks. A detailed survey of the area showed that a forty-five foot dam would raise the water to an

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<sup>7</sup>W.P.P., W. W. Cory to Pearce, June 15, 1925, File No. 22.4.

<sup>8</sup>See Map III.



elevation which could command eighteen hundred square miles of barren prairie to the East.<sup>9</sup> The obvious implications of such a proposal were not ignored by Pearce, who at once proposed that the waters be used for irrigation purposes. But, the Railway officials were not interested in his proposals to irrigate the lands, being elated over the solution to their steam-engine problem.

Pearce often discussed the possibilities of irrigating this tract of land with VanHorne. "Sir William often astonished me in discussing irrigation", said Pearce, "to find out to what extent he had an intimate and extensive knowledge of the question."<sup>10</sup> He hoped to entice the Railway into an irrigation project by informing them of the many advantages which would accrue to them if they were to accept the remainder of their land grant in a compact block instead of an alternate sections. Factors which had led to the downfall of the smaller irrigation companies, such as the high cost of land and the high interest rates they were forced to pay for construction loans, would be of no concern to the Company which would own the land to start with and would be able to negotiate low interest loans to pay for the cost of

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<sup>9</sup>W.P.P., "The Proposed Northwest Saskatchewan Irrigation Project and Some Reminiscences of Irrigation in Western Canada," A report to the Western Canada Irrigation Association, August, 1919, File No. 13.D.3.

<sup>10</sup>W.P.P., Pearce to K. Hughes, March 14, 1916, File No. 13.D.2.



constructing canals and ditches. In addition, the larger corporation would be able to construct storage dams in the mountains, making the operation far more efficient. From such a scheme the Railway could expect to have greatly increased traffic on its western lines from the more densely populated settlements, as well as a larger volume of freight traffic emanating from the increased population. VanHorne was enthusiastic about the prospects of Pearce's proposal, but he was unable to sway the other members of the Board of Directors who feared the devaluation of their land if it became known that there were arid lands in the West. It was only when all other possibilities of obtaining the remainder of their land grant had been examined without finding a practical solution that the Directors accepted the idea of a grant en bloc.

"The proposition that Sir William made to the Government regarding the irrigation scheme", Pearce was to state later, "was based on my own reports."<sup>11</sup> Pearce, who had been urging the Canadian Pacific Railway to take up the project and to complete their land grant, claimed to have been the "one who first directed their attention to the fact that under the charter the Government could give them their land en bloc, odd and even sections, and that was what finally induced the Company to take action."<sup>12</sup>

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<sup>11</sup>W.P.P., Pearce to A. R. Ruttan, January 26, 1894, File No. 22.115. Pearce explained that VanHorne had at first suggested to the Directors that the plan was his own idea in order to gain more support for it.

<sup>12</sup>W.P.P., Pearce to K. Hughes, March 14, 1916, File No. 13.D.2.



The C.P.R. submitted proposals in 1894 to the Minister of the Interior indicating a readiness on the part of the Railway to negotiate arrangements whereby lands within twenty-four miles of either side of their western main line could be conveyed to them en bloc.<sup>13</sup> The Railway anticipated that it was likely that the three million acres owing them on their land grant could be completed in this fashion. The Government readily accepted the proposal which had prospects of completing the bargain made with the Railway in 1881.

A joint survey was ordered by the Government and the Railway to ascertain the nature of the lands in question. Pearce and Doupe, the Chief Engineer for the C.P.R., defined the land block as an area forty-one miles wide and one hundred and seventy miles long lying adjacent to the C.P.R. tracks east of Calgary. The surveyors estimated that there was a good possibility of irrigating over two million acres of the semi-arid lands in the tract.<sup>14</sup> They recommended that the Railway apply for several stream diversion licenses from the Department of the Interior at points designated as having a good potential for the construction of headgates and diversion channels. It was felt that a diversion at Calgary, having a higher elevation, would be the most practical

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<sup>13</sup>W.P.P., "Extract from a Report of the Committee of the Honorable the Privy Council, approved by the Governor General on the 22nd August, 1903," File No. 13.B.7.

<sup>14</sup>W.P.P., Pearce to Wm. VanHorne, June 23, 1894, File No. 13.A.1.



and would command a larger area of the lower plains to the East.<sup>15</sup> The survey defined several small ponds and lakes which could be used for storage basins and outlined several dry water courses which could be utilized as natural drainage canals.<sup>16</sup> Both surveyors concluded that the future prospects of the Bow River Irrigation Project were excellent, as the surveys proved the scheme to be physically possible and economically feasible.

When he heard the results of the survey, VanHorne remarked that he would make the country, "fairly stink with blossoms through irrigation."<sup>17</sup> The Company filed applications for stream diversion license for Kananaskis, Banff, Logan, Calgary, and Crowfoot, and VanHorne ordered detailed sub-division surveys of the proposed block.<sup>18</sup> At the same time the Government started discussions with the Hudson's Bay Company with a view to negotiating the relinquishing of their lands within the project area. In anticipation of the approval of the plan, Pearce ordered the reservation from public entry all homestead lands unclaimed within forty-eight miles of the Railway's tracks between Calgary and Medicine Hat.

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<sup>15</sup>W.P.P., Pearce to A. M. Hamilton, August 20, 1894, File No. 13.A.1.

<sup>16</sup>W.P.P., Pearce to Wm. VanHorne, August 27, 1894, File No. 13.A.1.

<sup>17</sup>W.P.P., Pearce to Dennis, February 12, 1895, File No. 22.35.

<sup>18</sup>G.F.A., "Pioneer Irrigation Development in the Bow River Basin 1895-1920," A report to the Glenbow Foundation by Lawrence Burns, July, 1960, pp. 14-24.



The project would no doubt have gone ahead had it not been for a financial crisis the Railway faced in the mid 1890's caused by a worldwide depression in Canadian securities. VanHorne had been forced to take drastic measures to keep the Company out of the hands of the receivers. In a general reduction of salaries in the Company, he reduced his own salary 40% at this time, he told Pearce that "every dollar looks to us as big as a cart wheel."<sup>19</sup>

The President informed Pearce that the Board of Directors had not lost interest in his project, but would have to shelve the irrigation scheme until financial prospects were brighter. In addition, the Directors would require more data on the project before making a final decision. Of particular interest to them was an analysis of the amount of water available from the mountain rivers for irrigation purposes. They did not propose to agree to settle the land grant question with arid lands, only to find that the river flow was too small to irrigate the lands in the block. "We do not feel disposed to expend money on surveys of the district east of Calgary with a view to irrigation until we are reasonably sure of the settlement of the land question",<sup>20</sup> Pearce was informed. The Company was also hesitant about embarking on a large irrigation scheme until it was informed by the Government what its status would be under the terms of the

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<sup>19</sup>W.P.P., Pearce to K. Hughes, March 14, 1916, File No. 13.D.2.

<sup>20</sup>W.P.P., Wm. VanHorne to Pearce, July 1, 1895, File No. 9.7.



Northwest Irrigation Act, which required completion of the engineering works within ten years. This could prohibit building the irrigation system in stages over a longer number of years as suggested by Pearce. In the light of the foregoing arguments, the Company withdrew its application for the lands in the irrigation block.

Pearce pressed the advantages of the C.P.R. at least continuing surveys within the proposed block. "I trust that the revival of business conditions will enable your Company to carry out the suggested surveys of the Bow River Scheme,"<sup>21</sup> he wrote Sir William. He had calculated that the surveys could be completed for only \$1,000 and the information gained from them would be invaluable in future years if the Company ever decided to start the project. VanHorne replied that the Company was unable to carry out any additional surveys, but would welcome any information that the Government might give them from the reports of the general irrigation surveys being executed under the clauses of the Northwest Irrigation Act by J. S. Dennis jr.

Pearce was determined that the Railway be kept informed of the data collected by Dennis' survey parties. With the permission of the Minister of the Interior, he invited the C.P.R. surveyors to accompany the Government parties in their efforts to define the water resources of southern Alberta. By 1900 these mixed crews had located the line of the Bow River canal, the St. Mary's River

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<sup>21</sup>W.P.P., Pearce to Wm. VanHorne, June 25, 1895, File No. 13.C.13.



Canal, numberless reservoir and dam sites, and had gauged the flow of the mountain rivers for over three seasons. One of the findings of the report renewed the Railway's interest in the Bow River Project. The surveyors calculated that there could be as much as 3.8 million acres of land between the forks of the South Saskatchewan River and the Red Deer River which could be improved by the addition of water. Of this area almost 2.5 million acres of fertile land could be directly irrigated, the remainder having their value improved for pasturage purposes.<sup>22</sup>

While Pearce had been trying to interest the C.P.R. in the Bow River scheme, the Mormons at Cardston had been making plans to expand their irrigation works on the Lethbridge Plains. They had started to dig their "Pioneer Canal" on October 13, 1894, and water from the St. Mary's River had been diverted into the ditch on July 28, 1896,<sup>23</sup> just a few months after the Calgary Irrigation Company commenced operations.<sup>24</sup> The new plans called for the irrigation of 200,000 acres of land in the Stirling and Lethbridge regions.<sup>25</sup> The Alberta Irrigation Company (originally the

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<sup>22</sup>W.P.P., Data on surveys of the proposed irrigation block, File No. 13.C.13.

<sup>23</sup>A. James Hudson, Ora Card: Pioneer and Colonizer (Cardston: by the author, 1963), p. 139.

<sup>24</sup>See above, p. 90.

<sup>25</sup>Hudson, Ora Card, p. 142.



Northwestern Coal and Navigation Company and later the Canadian North West Irrigation Company), which was part of the Galt Enterprises, undertook to construct the main canal.<sup>26</sup> The Company agreed to pay the Mormons \$100,000 for their labor in digging the ditch and in return the Company was guaranteed sufficient land sales to make the project financially successful.<sup>27</sup> The St. Mary's Irrigation Canal was started in 1898 and water was delivered to Sterling in the fall of 1899 and to Lethbridge in 1900. The completion of the canal opened up large areas of southern Alberta for settlement.

Knowledge of the new St. Mary's River project provided the opportunity for Pearce to re-open the question of the Bow River Project with Van Horne and Thomas Shaughnessy, soon to replace the former as President of the C.P.R. "Knowing the interest you take in this subject is one reason for my communicating with you," he wrote, "but the chief motive is to bring again to your attention the Bow River Scheme which your Company is very largely interested in."<sup>28</sup> He advised Sir William to make every

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<sup>26</sup>Ibid., p. 140. Sir Elliott T. Galt owned large coal and land resources in southern Alberta. Charles A. Magrath was his business manager.

<sup>27</sup>Ibid., p. 143.

<sup>28</sup>W.P.P., Pearce to Wm. VanHorne, December 6, 1897, File No. 13.C.13.



effort to claim the lands needed by the project lest settlers make prior claims to the land which would result in costly litigation to remove them. The settlers would likely claim damages to their buildings far in excess of what they were worth, but a survey of land improvements made before the scheme was announced would stop undue speculation. He urged VanHorne to make every effort to acquire interests in the proposed block at the earliest possible opportunity to ensure the Company's wishes would prevail.

In the fall of 1899, Pearce was called to Ottawa for talks between the Government and the Railway Directors concerning the Bow River Scheme. The talks helped to convince Shaughnessy that the scheme was feasible and in fact desirable in that it would provide greatly increased traffic for his railway. This traffic would not be seasonal like the grain trade, which left the lines idle for the better part of the year, but would provide year-round demand for train service. Sifton was so enthusiastic about the outcome of the talks that he predicted Calgary would reach a population figure over 100,000 within ten years of the Bow River Project being started.<sup>29</sup> The Government and the C.P.R. officials agreed to co-operate in acquiring the necessary lands

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<sup>29</sup>W.P.P., Pearce to J. S. Dennis, February 15, 1900, File No. 13.C.1.



en bloc, and they further agreed to employ George Anderson, one of the best irrigation engineers in North America, to conduct an independent survey of the project.<sup>30</sup> Anderson had been employed as the Resident Engineer for the Lethbridge Plains Irrigation Project, and was well known to Pearce through their mutual interests in irrigation. Anderson agreed to make a survey of the Bow Scheme as soon as he was able to terminate his contract with the Alberta Railway and Coal Company. He was able to do this in 1901, when he and Pearce made a detailed plan for the C.P.R.

A reorganization of the Mines Branch of the Department of the Interior in 1901 provided Pearce with the opportunity of working in increasingly close contact with the Railway. The advent of the mining industry in Canada, particularly in the Yukon and northern Quebec, brought about the need for trained geologists in the Department to draft regulations governing the more complicated mining processes. Sifton proposed to move the office of the Superintendent of Mines to Ottawa, and offered Pearce the opportunity of accepting the new post. Pearce declined, claiming that he was too old to uproot his children who were nicely engaged in their schooling<sup>31</sup> and he had vested interests in the

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<sup>30</sup>W.P.P., J. S. Dennis to Pearce, November 22, 1899, File No. 13.C.1.

<sup>31</sup>W.P.P., Pearce to Sifton, January 31, 1901, File No. 22.126.



Calgary region, including an expensive house, which he did not care to leave. He offered to resign from the Government service provided the Minister would add ten years to his superannuation, as he had done for H. H. Smith, the Commissioner for Dominion Lands, when they had abolished the Lands Board in 1898. His resignation was refused and a new position was created commensurate with his seniority and knowledge of the West. He was appointed the Chief Inspector of Surveys, with an office located in Calgary permitting him to remain in the West.

Pearce asked and received permission from Sifton to communicate all information from the Government survey parties to the Land Department of the C.P.R. As the Chief Inspector of Surveys, he was able to commit more surveyors to the Bow River Project so that by the time the Company was ready to embark on its irrigation scheme surveys of the greatest detail had already been made of the project area. In return for this information and the permission to send its surveyors with the Government parties, the C.P.R. provided free transportation and supplies to the members of the mixed crews.<sup>32</sup>

The final estimates of the total cost of the project, five million dollars, staggered Shaughnessy, who had thought the major part of the works could be constructed for only one million

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<sup>32</sup>W.P.P., C. Sifton to Pearce, July 8, 1901, File No. 13.C.3.



dollars. Five million dollars was almost out of the question.<sup>33</sup> In an effort to re-assure the President of the C.P.R. of the certain financial success of the irrigation scheme, Pearce invited Shaughnessy to visit his estate in Calgary to observe the crop yields that could be produced from irrigation farming methods. Shaughnessy, who had been loath to accept the Bow River Scheme in the first place, arrived in Calgary in the midst of a heavy downpour that made "irrigation look like a joke."<sup>34</sup> Pearce was frustrated and disappointed at the turn of events and he expressed the fear that he "would not live long enough to see the day that the C.P.R. would start work on the irrigation scheme". He asked Anderson to "see a monument raised to him for his efforts in urging the Railroad on."<sup>35</sup> Shaughnessy was actually more pleased with the advantages of irrigation than Pearce had been able to ascertain. He had changed his ideas about irrigation from a chance remark that the Company could build spur lines into the grain growing areas and pay for their costs of construction from the sale of water rights.<sup>36</sup> The prospect of being able to

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<sup>33</sup>W.P.P., Wm. Whyte to Pearce, July 8, 1901, File No. 13.C.1.

<sup>34</sup>W.P.P., Pearce to George Anderson, June 13, 1902, File No. 22.5.

<sup>35</sup>Ibid.

<sup>36</sup>W.P.P., Pearce to A. Dawson, December 12, 1917, File No. 13.D.5.



increase the Railway's mileage of tracks without having to make expenditures from general revenues appealed to him. The Directors of the C.P.R. immediately re-opened negotiations with the Government for the transfer of lands within the Bow River Scheme, en bloc.

The Canadian Pacific Railway, by constructing its main line, and the Souris branch with the Pipestone extension, had earned 19,816,010 acres in land grants. In addition to this total, as the representative of the Manitoba South-Western Colonization Railway Company, and the Saskatchewan and Western Railway Company, the C.P.R. claimed another 1,495,680 acres.<sup>37</sup> In February, 1903 the C.P.R. approached the Government with the proposal for concluding the land grant structure. The Company was prepared to accept 2,900,000 acres en bloc between Calgary and Medicine Hat for the purpose of irrigating the tract and 100,000 acres of irrigable lands east of Lethbridge which could also be irrigated from the Bow River. The Company would then be in a position whereby all but a maximum 64,000 acres of their land grants would be claimed.<sup>38</sup> The Government agreed to the proposals provided the Company would claim their lands before July 1, 1904, at which time all unclaimed lands within the areas reserved for Railway land grants would revert to the Crown.

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<sup>37</sup>W.P.P., "Extract from a Report of the Committee of the Honorable the Privy Council approved by the Governor General on the 22nd August, 1903," File No. 13.B.7.

<sup>38</sup>Ibid.



Fortunately the project area had already been surveyed in detail, as the task of filing claims to three million acres of land was formidable. To supervise the multitude of details involved in the transfer of such a large block of land, and to administer the construction and planning of the irrigation project, the Company employed J. S. Dennis jr. Dennis immediately asked that his old friend Pearce be offered a position on his staff to help with the promotion of the Bow River Scheme.

The C.P.R. was anxious to have Pearce join their organization and offered him a position in May of 1903.<sup>39</sup> Shaughnessy looked upon him as an "expert in all matters concerning western affairs,"<sup>40</sup> and both he and Whyte, now an Assistant to the President, urged Pearce to accept their offers. His knowledge of western settlement would be invaluable to the Railway in locating branch lines and in defining the limits of fuel resources. And, his close relationship to the senior members of the Department of the Interior and his speaking acquaintance with many cabinet ministers implied that he was not without influence in Government circles, Dennis reported to Whyte.<sup>41</sup> Shaughnessy brought pressure to bear on Sifton to approve Pearce's request for superannuation

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<sup>39</sup>W.P.P., Pearce to Col. S. B. Steele, May 21, 1903.

<sup>40</sup>W.P.P., J. S. Dennis to Wm. Whyte, April 18, 1903, File No. 22.14.

<sup>41</sup>W.P.P., T. Shaughnessy to Wm. Whyte, April 22, 1903.



and in compliance with the request for the services of Pearce, the Minister of the Interior abolished the office of Chief Inspector of Surveys in order to warrant the early retirement of Pearce from Government service.<sup>42</sup>

Pearce's superannuation was based on the twenty-three years he had paid into the superannuation fund. He wished to fight the injustice of a \$1,380 annual pension based on the time he had made payments to the fund, on the ground that he had been employed by the Government since 1874; he also felt he deserved an addition of ten years to his superannuation time because his office had been abolished. The Company, however, was adamant that he leave the Department on the most friendly terms, and he was ordered to accept his pension without protest. The C.P.R. offered to increase their salary to him for the difference he felt he deserved.<sup>43</sup> It was obvious that the Company wished the services of Pearce for his influence among Department of the Interior officials, in addition to what he might have to offer in the field of actual survey work.

In writing about his long career with the Government, Pearce stated that "he had always considered himself to be a good civil servant and had always acted in a manner acceptable to

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<sup>42</sup>W.P.P., C. Sifton to Pearce, August 10, 1903, File No. 22.14.

<sup>43</sup>W.P.P., Wm. Whyte to Pearce, March 1, 1903, File No. 22.14.



his position."<sup>44</sup> He claimed to have never voted in an election, and had only discussed politics with a few friends in an academic manner. "The legacy I hope to leave my children", he concluded, "is that their father was an honest and hard working official and a faithful servant of those for whom he worked."<sup>45</sup> He noted that nearly all the Ministers and the Deputy Ministers under whom he had worked had thanked him for the job he was doing. He prized a letter sent him from Sir John A. Macdonald which said that he had appreciated the job Pearce had done "protecting for the benefit of the people of Canada the Public Domain against the land sharks."<sup>46</sup>

Pearce had hoped to become involved with the planning and the construction of the Bow River Scheme when he joined the C.P.R. April 1, 1904.<sup>47</sup> Initially he was assigned to aid Dennis in directing the field parties in their sub-division surveys and in drawing up proposals for transportation routes within the Bow River Project. Many of the irrigation principles he had taught Dennis when they had shared the same Calgary office in 1891 had been implemented by his pupil. When it appeared that Dennis had the irrigation works well in hand, Pearce was transferred to other duties.

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<sup>44</sup>W.P.P., Pearce to Arthur Meighen, March 22, 1919.

<sup>45</sup>Ibid.

<sup>46</sup>Ibid.

<sup>47</sup>W.P.P., Pearce to P. S. Archibald, February 6, 1904, File No. 22.8.



The Railway asked Pearce to supervise, in an executive capacity, the formidable task of surveying all the lands comprised within its land grant. It was necessary to know the settlement patterns of the western population in order to plan branch line extensions into the heavily populated areas, in an effort to forestall private or Government competition. In 1910 Pearce began a township by township survey of the West which was to be the most comprehensive survey the West had known, and which was not completed until 1915.

Upon completion of his detailed survey of western settlement, Pearce was assigned the duties of supervising the Canadian Pacific Railway's Statistical Department. His time was fully occupied with preparing a variety of reports on all facets of railway operations from making graphs of wheat tonnage hauled in a season to the effect of municipal taxes on the Railway's operations. In the early 1920's he became involved with the study of fuel supplies for the C.P.R. He became thoroughly acquainted with the gas and oil industry, and became a Director on the Board of the Royalite Oil Company. He also made a reconnaissance survey of the Athabaska Tar Sands and of the Mackenzie Delta with a view to ascertaining their mineral value to the C.P.R.

Pearce officially retired from the Canadian Pacific Railway in 1926 after two annual extensions of his office, due to the kindness of his old friend J. S. Dennis jr., now an Assistant to the President of the C.P.R. He was granted a living allowance of \$50 a month and was permitted the use of his old



office, although his secretarial help was withdrawn. He continued writing memorials on a variety of subjects of importance to the Railway, as well as pursuing his efforts to foster irrigation in the West. He spent regular working hours in his office until shortly before his death on March 3, 1930, at the age of eighty-two.



## CHAPTER V

### THE NORTH SASKATCHEWAN IRRIGATION PROJECT

In the summer of 1912, the Board of Directors of the Canadian Pacific Railway decided to extend branch lines into many settlement areas in southern Saskatchewan and Alberta. The lines had been recommended by Pearce to serve the area south of a line drawn from Saskatoon in Saskatchewan to Wetaskiwin in Alberta. In carrying out his assignment, Dennis charged Pearce with particularly noting the status of all unsold C.P.R. lands as well as making a report on lands purchased from the Railway on which mortgage payments were in arrears.<sup>1</sup> The study that Pearce was to make of factors pertaining to settlement on the Western prairies was to take three years. In his characteristic thoroughness he directed a township by township study of all the potential farm lands on the plains, personally taking much of the evidence for the study during his frequent journeys across the prairies.

The results of his study were far from encouraging. Almost every section of the plains was experiencing drought conditions and the number of observed abandoned homesteads made Pearce designate a number of areas as uninhabited. In his interim report to the Company in 1912,<sup>2</sup> he reported that the Taber-Dunsmore

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<sup>1</sup>W.P.P., J. S. Dennis to Pearce, August 2, 1912, File No. 25.A.13.

<sup>2</sup>W.P.P., Reports of his inspection trips over the prairies 1910-1915, File No. 14.A.6.



area could be considered unoccupied, a circumstance which he blamed on the lengthy dryness which had forced the abandonment of many of the farms in the area. The fertile soils, free from alkaline salts, lacked only water to make them productive. In subsequent reports to Dennis he continually described evidence of extensive prairie fires and farmsteads grown over with weeds. In Saskatchewan he first saw evidence of large scale soil drifting. "A strong, cool north-west wind was blowing steadily all day;" wrote one of his travelling companions, "and the whole country, instead of living at peace, was standing up vertically to the skies and moving rapidly to the south-east." The companion continued, "every single field, heavy soil or light, was pock marked by the strong winds that had already passed over earlier this season."<sup>3</sup> What Pearce had witnessed was the effects of the strong westerly winds on the dry, pulverized state of the prairie soils which had resulted from the continual cultivation of the land by dry farming techniques. The mining of the soil had removed all the fibre from the land and Pearce feared that if the fibre were not restored a large portion of the western plains would become a wasteland.

In order to restore fibre to the soil, Pearce suggested increasing the numbers of range cattle. The stock manure from the range herds would restore the fibre to the soil. The practice

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<sup>3</sup>W.P.P., "Better Balanced Farming," A report by the President of the Lethbridge Board of Trade, G. H. Marnoch, to the Western Canada Irrigation Association, Medicine Hat, August, 1919, File No. 13.A.1.



of many farmers of transporting cattle to the northern ranges for summer feed was expensive and Pearce suggested the money would better be utilized in financing irrigation schemes which would produce enough green fodder to feed additional cattle on their home ranges. "Many of our farmers are still not alive to the fact of the value of our waters which are flowing past our doorsteps",<sup>4</sup> he wrote Dennis. The present emergency, he continued, was one that could be met by increasing the forage crop production to feed the cattle during the winter, and for the promotion of forage crops irrigation is desirable. He described the settlers as having been asleep in developing our streams and rivers. "The farmers feel the cost of getting water to the farms too great, and they don't know enough about irrigation farming techniques",<sup>5</sup> he concluded.

The great barrier to irrigation development, as well as to general agricultural improvement of the West, was the small amount of working capital possessed by the new settlers. "The statement had frequently been made that \$1,000, or in fact \$500, is a sufficient amount with which to start farming operations on a new prairie homestead," E. F. Drake, Superintendent of the Reclamation Service, wrote Pearce. "The shortage of cash," he continued, "is, I presume, the reason why all new settlers go in

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<sup>4</sup>W.P.P., Pearce to J. S. Dennis, n.d., File No. 13.A.1.

<sup>5</sup>Ibid.



for grain crops...the cheapest crops that can be grown and require, perhaps, the least care."<sup>6</sup> The continual mining of the soils over a number of years of crop production left it sterile and unproductive. "Unfortunately," charged The Calgary Herald, "large numbers of settlers farm too little and trust in Providence too much."<sup>7</sup>

As an acknowledged expert on western settlement, Pearce was appointed to the staff of the Royal Commission on Economics and Development created by the Federal Government. The Commission was under the chairmanship of Senator Lougheed,<sup>8</sup> who was charged with the responsibility of reporting on the condition of western lands and of recommending measures to control the future disposition of natural resources in Canada. One of the main responsibilities of the Commission was recommending plans for the resettlement of the Canadian Army upon its return from the war. The possibilities of opening up large sections of the plains for soldier settlement was indeed attractive. Pearce was appointed to the advisory staff of the Commission on February 14, 1916, as a Dominion Land Surveyor and an expert on land settlement.<sup>9</sup> There was no other

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<sup>6</sup>W.P.P., E. F. Drake to Pearce, April 13, 1916, File No. 13.A.1.

<sup>7</sup>The Calgary Herald, November 14, 1921.

<sup>8</sup>Official Report of the Debates of the House of Commons, 1916, CXXV, p. 3641. The other members of the Commission were: Mr. Farrell, British Columbia; Dr. Rutherford, Alberta; Mr. Hopkins, Saskatchewan; William Smith, Ontario; W. B. Ross, Nova Scotia; Mr. Rolland, Montreal.

<sup>9</sup>W.P.P., "A certified copy of a Report to the Committee of the Privy Council approved by His Royal Highness the Governor General on the 11th April, 1916:"



person with the vast amount of experience he had had on the prairies, and the data he had collected, mainly in the form of affidavits whose evidence he had personally collected, was to amount to over 800 pages of statistical tables and reports.<sup>10</sup> Of his work presented to the Commission, the Prime Minister commented that "it was a most careful study of railway development in connection with land settlement." Borden further remarked in the House of Commons that Pearce, "had prepared plans which, I understand, are of very important character, and which have been spoken of very highly."<sup>11</sup>

Pearce methodically proceeded to outline the condition of western lands, particularly in Alberta. That province, Pearce reported, contained approximately 162 million acres of land of which half might be considered agricultural lands, the remainder being made up of swamps, lakes, ridges, and mountains.<sup>12</sup> Of the 81 million acres of land suitable for settlement, there was approximately 49 million acres in which settlement was well advanced, while the

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<sup>10</sup>W.P.P., A file on the data presented to the Royal Commission on Economics and Development, File No. 9.5.

<sup>11</sup>Official Debates of the House of Commons, 1916, CXXV, p. 3611.

<sup>12</sup>W.P.P., Unless otherwise stated the statistical data for the discussion on western land development in this chapter has been taken from File No. 9.5. The data on western lands was also made available as evidence to the Dominions Royal Commission, created by the British Parliament, to examine the resources of the Commonwealth. A letter asking Pearce to certify his evidence before the Commission from A. N. Bridgeman, the Commission's Secretary is dated March 19, 1919, File No. 9.4.



remaining 32 million acres would not be settled for some time. The 49 million acres proposed for immediate settlement could be further sub-divided into 5 million acres of mixed prairie and bush lands, 24 million acres of bushland, and 20 million acres of bald prairie. Of the latter category over 12 million acres could be considered barren due to a lack of water. On these acres, irrigation was necessary to a greater or lesser degree to make the lands productive. But, Pearce calculated that there was likely only enough water in all the mountain streams and rivers to successfully irrigate 6 million acres. The remainder of the semi-arid lands would always remain pasture lands.

Pearce believed that the amount of lands directly irrigable could be raised to 9 million acres if efforts were made to conserve every drop of water now being unused in its journey to the oceans. The prime method of increasing the amount of water available for irrigation in May and June, the best months for irrigation, would be to construct upstream storage dams. The dams in the water-sheds of the eastern Rockies would trap the large volume of spring run-off waters making them available for irrigation purposes. This water could be stored during the winter and spring months ready for diversion to the irrigation plots on the plains below. The dams would also act as flood control devices lessening the danger from heavy rainfalls in the mountains swelling the mountain rivers and resulting in heavy damage to the downstream communities from their waters



overflowing their banks and inundating the lands.<sup>13</sup>

He proposed that a number of smaller dams would be better than a few larger ones. If one of the dams would break, very little damage would occur from the smaller construction. He planned to beautify the lakelets formed from these dams by close-cutting the timber along the edges and planting grass along the banks so that drowned timber would not mar the beauty of the site. The dams would eliminate many unsightly marshes and swamps in the headwater region of the rivers by making them into fish filled lakes. He hastened to add that the tourist value of the mountain area would not be harmed as the reservoirs would be filled in the early spring months before the tourist season opened and the waters would not be released to the storage basins on the plains until after the tourist season ended in late fall.

A further benefit from the dams could be gained by building a network of hydro-electric stations in the mountains. He felt it stupid to overlook the power potential in the 1,600 foot fall of water between Lake Louise and Calgary. The power potential of the Bow River with this fall would amount to 384,355 h.p. "In Switzerland and Sweden," he added, "power stations are designed to blend in with the scenery and even add to the effect."<sup>14</sup>

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<sup>13</sup>W.P.P., "Necessity of Reservations for Reservoir Sites," A report to the Western Canada Irrigation Association, Vernon, October, 1921, File No. 13.E.5.

<sup>14</sup>Ibid.



An additional supply of water could be made available by closely regulating the forest cover on the eastern Rockies. The forests help to govern stream flow by slowing down the rate of melting of the snow by the warm spring sun, and by increasing the amount of underground seepage by protecting the soils against the onslaught of the heavy rains. The forests act as an important device for protecting the source of the stream waters by slowing down the process of erosion of the soils. A careful control of the lumber industry and a regulated procedure for re-forestation would make available additional water for irrigation projects.<sup>15</sup>

A further analysis of Pearce's data showed that the economic structure of Western Canada, based primarily on the agricultural industries, was close to total collapse. The prospect of this immediate failure was due to the widespread abandonment of farms in the three prairie provinces. Between 1900 and 1909 of the 251,517 claims made to land, there were 132,387 applications for land cancelled, or 52.6%. This compared most unfavorably with the long term average of only 38.7%.<sup>16</sup>

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<sup>15</sup>W.P.P., "The Relation of Forest Cover to Water Supply, with Particular Emphasis on the Cypress Hills," A report by E. H. Finlayson to the Western Canada Irrigation Association, Medicine Hat, August, 1919, File No. 13.E.6.

<sup>16</sup>W.P.P., A series of charts depicting the yearly status of land claims since 1886, File No. 9.5. Since 1886 there had been 262,865 cancellations out of 664,723 applications for land claims.



In his statistics Pearce had taken into account the drain on western manpower by the necessities of the war and the rising trend to move into urban areas, despite these factors, he felt that there was an inordinate number of unproductive farms, which he felt was caused by a deficient rainfall. The rainfall, marginal for the growth of crops, had been sub-normal for a succession of years causing a return to drought conditions.<sup>17</sup> Because of the likely continuation of the drought the Commission recommended that the Government should study possible plans for a comprehensive irrigation project for the semi-arid regions in the West.

The problem of the prairie drought assumed greater proportions when consideration was being given to the problem of rehabilitating the veterans after the war. The Commission wanted to settle the returning soldiers on vacant western lands. Pearce had reported that there were at least 15,433,200 acres of vacant lands within twenty miles of the existing railways.<sup>18</sup> The problem of reclaiming these lands centered on the ability to apply artificial supplies of water to them. The Commission felt that the costs of irrigation schemes might be reduced provided

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<sup>17</sup>The Irrigation Review, Vol. II, No. 7 (Fall, 1918), p. 1. A graph of the rainfall recorded at the Lethbridge Experimental Station between 1900 and 1920. In 1910 only 7.25 inches of rain were recorded and in subsequent years the rainfall though average, fell mainly outside the growing season.

<sup>18</sup>W.P.P., Pearce to W. J. Black, April 26, 1916, File No. 6.28.



labor was supplied from the returning veterans in exchange for lower land prices.

The project recommended by Pearce to the Commission for the purpose of reclaiming the semi-arid regions in the West (see Map III), was similar to the comprehensive irrigation projects he had seen in northern India during a world tour in 1910.<sup>19</sup> The problem faced in the Canadian West was similar to that of the plains lying under the southern slopes of the Himalayas. Large areas of northern India were being irrigated by gigantic canals capable of carrying thousands of cubic feet of water long distances to the barren plains. The canal diverting water from the Chenab River carried 11,000 cfs with which it irrigated 2.5 million acres of land. While there, Pearce observed the construction of a still larger canal capable of transporting 15,000 cfs of water to irrigate close to 4 million acres of desert soil. The volume of grain produced from these previously barren lands amounted to 69 million bushels annually. In comparison to the main canal of the Calgary Irrigation Company, which was considered large when it was planned to carry 500 cfs, the size of the Indian schemes were gigantic.

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<sup>19</sup>W.P.P., "Some Comments on Irrigation and Forestry as the Result of Cursory Observations Made on a Trip Through the Following Countries: Egypt, Sudan, India, Ceylon, Burma, Java, Australia, Tasmania, New Zealand, Phillipines, Formosa, China, Korea and Japan, "File No. 28.9.



The upper Ganges Canal, the oldest in India, also impressed Pearce. The canal had stood the test of time, being over fifty years old and a survivor of earthquakes and tribal warfare. In places viaducts carried the water fifty feet above the ground for lengths of over four miles. The canal had been carried over, under, and through other rivers.<sup>20</sup> The scope and potential of the irrigation schemes in India opened new horizons to Pearce who wondered if a plan embracing all the rivers flowing from the eastern Rockies could be possible.

"It was his idea that the dry area from Hanna east to Regina in Saskatchewan could be irrigated by the North Saskatchewan and the Red Deer Rivers",<sup>21</sup>H. E. Strom, Alberta's present Minister of Agriculture, has stated. The results envisaged by his project were an increase of population in the West and a greatly increased agricultural production capability from the intensive farming and greater yields of irrigated tracts of land. In other words, the project was designed to create a denser population on the prairies by providing a secure base for farmsteads in the semi-arid regions. The irrigation construction would provide an assured water supply to an area where the natural hay crops could not be depended upon and where farming was risky due to a deficiency of

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<sup>20</sup>Ibid.

<sup>21</sup>A.W.R.B., H. E. Strom to H. Hays, May 18, 1965, File No. 2232, Part 6.



rainfall.

"The scheme was very much bigger than anything of its type in North America," Pearce boasted, "and was aimed at reclaiming a large area not successfully farmed any other way."<sup>22</sup> The amount of land involved in the final stages of his project would amount to over nineteen million acres. The construction of the North Saskatchewan River Diversion Scheme would prove of immense value to the prairies.

The members of the Royal Commission on Economics and Development recommended Pearce's project to the Department of the Interior. The likelihood of the Commission being permitted to bring down a final report was remote. Prime Minister Borden had announced to the House of Commons that the Commission was of an advisory nature, and although much good work was being done in making valuable suggestions for the consideration of other government departments, a final report would not be forthcoming.<sup>23</sup> It was felt that the Pearce project could best be advanced through other agencies.

Pearce took every opportunity while in Ottawa to discuss his project with the Minister of the Interior. "What is desired", he explained to Dr. W. J. Roche, the Minister of the

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<sup>22</sup>W.P.P., "The Proposed Northwest Saskatchewan Diversion Project and Some Reminiscences of early Irrigation," File No. 13.A.1., p.6.

<sup>23</sup>Official Debates of the House of Commons, 1917, CXXVII, p. 1125.



Interior," is the irrigation of that portion of the country lying along the northern bank of the Red Deer and South Saskatchewan Rivers and the north thereof."<sup>24</sup> Pearce urged Roche to authorize reconnaissance surveys of the area to decide whether the scheme was physically and economically practical. He had been planning to go over the lands himself, he told Roche when he had been appointed to the Commission and he had not been able to do so.<sup>25</sup>

He took advantage of the offer extended to him by Roche to examine the elevations of the prairies as ascertained by Department surveyors since 1904. He spent many hours working out proposed canal locations and reservoir sites. From his calculations he prepared a memorandum on how he would proceed with initial surveys of the project area had he been placed in charge.

"Perhaps the best way to indicate how I would suggest for you to proceed would be to state what I would do if I were placed in charge of the scheme",<sup>26</sup> he told the officials of the Department.

Pearce knew that the biggest problem would be the total development of the eastern watershed region of the mountains. Once the water were placed in storage, there would be little difficulty in designing a canal to transport it to the plains. The water would only have to be diverted from the storage basins

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<sup>24</sup>W.P.P., Pearce to W. J. Roche, March 31, 1916, File No. 13.A.1.

<sup>25</sup>Ibid.

<sup>26</sup>W.P.P., "Memorandum," March 31, 1916, File No. 13.A.1.



at elevations higher than the plains below in order to use a gravity flow system of applying it to the land. To determine the amount of water available for the project, extensive surveys would be required to obtain accurate data on stream flow and the precise elevations of the surrounding plains. Once the location of possible reservoir sites had been made and their capacity for storage determined, plans could be made to direct the available water to lands which would benefit the greatest number of people.

From data supplied him from the Department of the Interior, he estimated that there would be 12.7 million acres of land affected in Saskatchewan and approximately 7 million acres of land improved by irrigation in Alberta,<sup>27</sup> all lying between the forks of the Saskatchewan Rivers. Of this area an estimated 70% of the lands would benefit from the irrigation project either through direct application of water or from indirect means such as the raising of the water table. The remaining 30% of the lands were either too rocky or too sandy to benefit from irrigation. As there was more land needing irrigation than water to irrigate it, the Government would have to be responsible for the apportionment of the water to the barren lands.

Pearce suggested that the Department investigate the possibility of diverting the North Saskatchewan River from its channel at some point upstream from Rocky Mountain House. The

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<sup>27</sup>Ibid.



average fall of the river above that point of diversion was 12 feet in the mile, and if taken out about 13 miles above the community, the water could be channeled down natural water courses until it reached the summit ridge above Lacombe. From here the water could be channeled to possible storage basins in Buffalo, Red Deer, Sullivan and Gull Lakes. The streams crossed by the canal would be small and many of them could be incorporated into the main canal system. The duties of the reconnaissance survey parties would be to investigate vested interests adjoining the lakes in an effort to determine the cost of inundating improved lands.

The Superintendent of the Irrigation Branch of the Department of the Interior agreed with Pearce that preliminary surveys should be immediately undertaken to ascertain the possibilities of the project. "In my opinion", wrote E. F. Drake, "Irrigation will be most profitable when applied to the raising of forage crops in connection with mixed farming." He echoed Pearce when he further stated that there were "immense areas in the prairie provinces where irrigation farming, properly practiced, should reclaim and render profitable the arid lands."<sup>28</sup> However, he doubted if the density of population in the settlement areas would increase rapidly enough to warrant the expenditure of more than preliminary surveys at this point. He reminded Pearce that there was still a large area of unclaimed land in southern Alberta

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<sup>28</sup>W.P.P., E. F. Drake to Pearce, April 13, 1916,  
File No. 6.20.



which should have priority in future settlement.

Pearce did not hesitate to point out that he had personally gone over the lands involved in the project more times than any other person, and the data he had obtained from the Department files proved his plan was physically possible. He recalled that he had first suggested the project to Clifford Sifton in 1898, when he urged the preliminary surveys be undertaken.<sup>29</sup> He had not bothered to press his plan upon the Department during the reign of Frank Oliver as he felt that there was little need for irrigation at that time.<sup>30</sup> But now, the population was large enough in the semi-arid regions to necessitate Government action to end the problem of cyclical droughts. He had tried to interest the C.P.R. in his project but the Railroad had not taken any interest in the scheme as they were already committed to the development of the Irrigation Block.

Drake asked the advice of F. H. Peters, Irrigation Commissioner for the Federal Government in Calgary, for his recommendations on the proposed surveys. Peters replied that he

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<sup>29</sup>Interior Report, 1898, Report of the Superintendent of Mines. Pearce asked for a survey of all streams flowing from the eastern Rockies. He did not single out the North Saskatchewan River for particular attention at this time.

<sup>30</sup>It is likely that the real reason for not urging his project on Oliver was due to the antipathy between the two men, resulting from their feud over stock reservations in 1896.



felt the project was not yet economically sound in that there was a dearth of population in the proposed irrigated area which could pay the cost of construction. He further pointed out that his office was hard pressed to maintain his regular duties, due to the manpower shortage during the war years, and he did not welcome any additional duties. The costs of the preliminary survey, he estimated, would likely be \$4,000 and as such he could not recommend proceeding with the plan in wartime.<sup>31</sup> The Minister of the Interior agreed with Peters and pencilled on Drake's recommendation to proceed with the surveys, "I think this may well be left over until after the war."<sup>32</sup> The North Saskatchewan Irrigation Project was shelved by the Department until 1919.

In the interval Pearce continued to agitate for Government action. He made speeches at conventions and wrote articles to the newspapers outlining the benefits of his plan. He attempted to enlist the aid of the local Boards of Trade in forcing the initiation of surveys. "It might be well that agitation should be started by the Boards of Trade", he informed John Walter of Edmonton. "I think you could possibly get the Board of Trade in Edmonton to move the matter", he continued; "being an officer of the Canadian Pacific Railway, I am somewhat handicapped... because it would at once be asserted that this is a C.P.R.

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<sup>31</sup>A.W.R.B., E. F. Drake to F. H. Peters, February 5, 1915, File No. 2232, Part L.

<sup>32</sup>A.W.R.B., E. F. Drake to F. H. Pearce, January 13, 1922, File No. 2232, Part 2.



movement and there must be something rotten about it."<sup>33</sup> He used every means at his disposal to forestall real estate interests who opposed his scheme on the grounds that it would devalue their lands if the West were classified as semi-arid. "Many who have lands to dispose of conclude that its value will be greatly lowered if it be thought that irrigation necessary or beneficial",<sup>34</sup> commented Pearce. He explained the absence of support for his project among the Boards of Trade as being the result of the real estate agents having control of the Boards and persuading the local merchants not to lobby for the Pearce scheme.<sup>35</sup>

Called to Ottawa in 1919 to aid the Soldier Settlement Board, Pearce was asked to give a short talk to the Dominion Land Surveyors' Association. In his speech on the North Saskatchewan Irrigation Project, Pearce called "attention to the fact that for twenty years he had asked surveys be made to ascertain the cost, but so far no surveys have been made."<sup>36</sup> After the function was over, the Minister of the Interior, Arthur Meighen, approached Pearce and asked him to meet with him in his office the following day to discuss the project further. After the meeting, Pearce

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<sup>33</sup>W.P.P., Pearce to J. Walter, August 2, 1915, File No. 13.A.1.

<sup>34</sup>W.P.P., William Pearce to S. K. Pearce, February 3, 1919, File No. 13.A.1.

<sup>35</sup>Ibid.

<sup>36</sup>Ibid.



wrote his son that he felt "confident that I have interested him sufficiently to be fairly certain that those surveys will be made this summer."<sup>37</sup>

In the summer of 1919, on orders from the Minister, extensive surveys were begun to investigate all the aspects of the North Saskatchewan Project. The surveys were continued until the final recommendations were received by the Government in the fall of 1922. Pearce thought that it was "almost certain that there will be immediately and continue for some years a very considerable development in irrigation"<sup>38</sup> as a result of renewed Government interest.

During the four years of Government surveys, Pearce was often seen motoring across the prairies with Drake and Peters investigating reservoir and canal sites. The key to the project was in acquiring the use of the maximum amount of water available for irrigation purposes. The storage basin of the North Saskatchewan River, 1,730 square miles, was to be utilized to its fullest extent. Many storage dams would have to be constructed to trap the waters from the spring run-off, while larger dams would have to check the flow of the rivers thus creating large lakes behind the dams to facilitate storage.

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<sup>37</sup>Ibid.

<sup>38</sup>W.P.P., Pearce to J. S. Dennis, March 22, 1920, File No. 13.A.1.



The site chosen for the main dam was at the Brazeau Gap, where the North Saskatchewan River cuts through the final mountain ridge barring it from the plains. A dam 175 feet high and 1,700 feet wide was projected to form a lake 16 miles long and over a half a mile wide behind it. The Kootenay Plains would be inundated by 10.4 billion cubic feet of water. The resulting level of the water behind the dam would enable the water to be diverted southward into the Clearwater River.<sup>39</sup>

The Clearwater River is also fed from an extensive watershed in the snow fields of the eastern Rockies. It was proposed to construct a second major dam on this river about 42 miles south-west of Rocky Mountain House. The dam would be 144 feet high and create a reservoir capable of storing 6 billion cubic feet of water. By the use of flumes and dredged canals it was anticipated that the combined waters of the two rivers could be placed on a ridge above Red Deer at an elevation of 3,330 feet.

From the height of this ridge the water could be used to irrigate 1.2 million acres of land on the Red Deer Plateau, or it could be channeled to the storage basins in the Hanna region. To provide additional water for the Red Deer Plateau, a dam was proposed for the Red Deer River at a point nine miles below the townsite. Plans were also discussed of constructing a hydro-

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<sup>39</sup>W.P.P., "Report of Storage Possibilities of the North Saskatchewan River at Kootenay Plains," A report by C. H. Attwood to the Department of the Interior, June 15, 1915.



electric power station in conjunction with the 90 foot dam.<sup>40</sup>

However, studies made by the Department showed that although the project was physically possible it was not economically feasible due to the sparse population in the Red Deer area.<sup>41</sup>

The remainder, and greater portion, of the water would be channeled to storage basins east of Red Deer. Investigations were made of the suitability of Buffalo and Sullivan Lakes for such purpose. In both instances it was discovered that considerable amounts of land would have to be inundated to raise the level of the lakes the required twenty to forty feet. Buffalo Lake appeared to have the better facilities as by considerable dyking of the north shore of the lake a reservoir sufficient in size to store water capable of irrigating 800,000 acres would be obtained.

Pearce estimated that the size of the main canal would have to be sufficient to carry 10,000 cfs during the winter and fall months to completely fill the reservoirs. He was certain that if the canal were deep and wide enough, and constructed with long sweeping curves with no sharp corners, the problem of ice formation on the water surface would be solved. The main worry over a canal of that size was in the possible extensive

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<sup>40</sup>W.P.P., "A Report on the Power Possibilities of the Red Deer River at Canyon Power Site," A report to the Department of the Interior by C. H. Attwood, July 12, 1916.

<sup>41</sup>Ibid.



evaporation losses which some engineers estimated as high as 50% of the water carried. It was hoped to reduce this drawback by making the canal steep and narrow. The final plans calculated the size of the canal at 14 feet deep and 20 feet wide.

The final report of the reconnaissance surveys was not optimistic about the North Saskatchewan Diversion Project. There was no doubt about the physical possibilities of the scheme, nor was there any doubt that a large area of land could be irrigated east of Hanna by waters carried over 200 miles from storage dams in the mountains by the main canal to the irrigation areas. The engineering and construction aspects of the project received the unqualified approval of the Government engineers.<sup>42</sup> However, grave doubt was expressed by Government economists as to the economical feasibility of the scheme. In the first instance there did not seem to be any immediate necessity for starting construction on the scheme in the near future. In the second instance, the absence of densely settled areas within the boundaries of the scheme would create an impossible financial burden for the irrigators.<sup>43</sup>

Peters' report to Drake cast doubt on many aspects of the project which Pearce had considered vital to its success. Peters reiterated the doubts expressed in his interim reports

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<sup>42</sup>A.W.R.B., E. F. Drake to Pearce, April 13, 1922, File No. 2232, Part F.

<sup>43</sup>A.W.R.B., E. F. Drake to W. W. Cory, October 27, 1919, File No. 2232.



that there were more than three million acres which would benefit from the scheme, compared to the seventeen million acres Pearce had announced.<sup>44</sup> The fact that a considerably smaller area would benefit from the project would mean that the costs of the construction could not be met through the rental charged to proposed water users, unless the scheme were modified to exclude the waters from the North Saskatchewan system. Peters felt that the water from the Red Deer River would be sufficient to provide enough water for his modified plan.<sup>45</sup>

Another barrier to Government action on the project was the general lack of public support for the scheme. The area was sparsely settled, and the vacant lands in the southern part of the province were being settled far more rapidly than those in the central areas. Drake estimated that the demand for lands in the project area would not likely develop for several years to come.<sup>46</sup> He concluded that the scheme would only prove possible when all the southern lands had been claimed, forcing new settlers to invade the semi-arid central regions.

Doubts were cast on the need for irrigation farming in view of the success of dry farming techniques in the past.<sup>47</sup>

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<sup>44</sup>A.W.R.B., F. H. Peters to E. F. Drake, October 13, 1919, File No. 2232.

<sup>45</sup>Ibid.

<sup>46</sup>A.W.R.B., F. H. Drake to W. W. Cory, December 4, 1919, File No. 2232.

<sup>47</sup>A.W.R.B., J. Bracken to F. H. Peters, October 27, 1919, File No. 2232.



It was reported that the need of a large and comprehensive irrigation scheme would be in the far distant future when population in the West necessitated the cultivation of the arid lands. However, Drake cautioned the Deputy Minister, W. W. Cory, that as the Department had already begun surveys in the area it would be politically wise to at least maintain a semblance of progress on the scheme to hold the few remaining settlers in the area.<sup>48</sup> Further Government action, to stop the expected exodus of the settlers, could take the form of topographical surveys, which would be needed in any case, or in construction of water flow measuring stations, on the rivers, whose information would always be of some value.<sup>49</sup>

The greatest disadvantage of the North Saskatchewan project was the estimated cost of \$105,000,000. The heavy costs could not be justified in view of the few people in the region which would benefit from the scheme. The Calgary Herald questioned the Government's feigned penury by suggesting that the price would only amount to the total cost of building and equipping three battleships. If all three Government levels were included in the scheme then there would not be much of a financial hardship on any of them, especially in view of the increase in western population the project would create.<sup>50</sup> Even Drake was favorably

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<sup>48</sup>A.W.R.B., F. H. Peters to E. F. Drake, December 16, 1919, File No. 2232.

<sup>49</sup>Ibid.

<sup>50</sup>The Calgary Herald, October 13, 1921.



inclined to proceed with the construction, as he reasoned that the scheme would eventually have to be built<sup>51</sup> and the Government might as well take advantage of low construction costs, which in the future might double. He advised Pearce to carry his ideas into Saskatchewan to receive additional support from farmers in the drought areas of the neighboring province, for he warned that unless strong petitions were received by the Department from a larger area no further surveys would be authorized.<sup>52</sup> The warning was well taken as the Acting Commissioner for Irrigation, V. Meek, advised Pearce that no Government funds would be made available for new surveys at that time.<sup>53</sup>

Public interest in the project turned to indifference with the return of the wet years beginning in 1923. Pearce hoped that enough interest in the scheme could be engendered to at least force the Government to begin construction of upstream storage facilities for the purpose of flood control if for no other reason.<sup>54</sup> However his hopes were vain. The problem with irrigation, he finally discovered, is that it is rarely successful unless there

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<sup>51</sup>A.W.R.B., E. F. Drake to W. W. Cory, December 4, 1919, File No. 2232, Part F.

<sup>52</sup>A.W.R.B., E. F. Drake to Pearce, April 27, 1922, File No. 2232.

<sup>53</sup>A.W.R.B., V. Meek to Pearce, April 22, File No. 2232.

<sup>54</sup>W.P.P., Pearce to W. J. Black, December 6, 1923, File No. 13.A.1.



is a need for it, and in wet years it is seldom required.

The project was shelved by the Government in 1923, and it was not re-examined until after the creation of the Prairie Farm Rehabilitation Administration in 1935. Surveys were resumed, but were again interrupted by the outbreak of war in 1939.

Consideration of the project was resumed in 1951 by the Alberta Water Resources Board.<sup>55</sup> Since that time the original Pearce plan has been modified in the light of more detailed knowledge of the soils involved, much of which were found unsuited for irrigation purposes, and the knowledge that much of the topography of the lands has been shown to be too rough for irrigation projects.<sup>56</sup>

The project received still another setback in 1958, when the Province of Saskatchewan and the Government of Canada commenced work on the South Saskatchewan River Dam near Outlook. Much of the area that the Outlook Dam will serve could have been served by the Pearce Project. Development of the project now involves a limited regional area, particular to Alberta. Present plans

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<sup>55</sup>A.W.R.B., "The William Pearce Project, 1962," A report by J. F. Hugo to the Alberta Water Resources Board, 1962.

<sup>56</sup>A.W.R.B., "Analysis of Water Needs in the William Pearce Project," A report by Stewart Raby to the Alberta Water Resources Board, August, 1962.



call for a modified, multi-purpose project to be constructed over a 25 year period.<sup>57</sup> Initial construction on the upstream dams will likely start in 1966, to be followed by the building of the main canal and lateral canals as settlement requires them.

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<sup>57</sup>A.W.R.B., "The Proposed William Pearce Project, 1962," A report by F. H. Hugo to the Alberta Water Resources Board, 1962.



## CHAPTER VI

### CONCLUSION

In 1884 heavy spring floods washed away the few irrigation ditches that had been constructed on the Canadian prairie. Small in size and narrow in scope, these ditches had been dug by hand for the purpose of diverting river water onto low lying hay meadows by settlers whose lands bordered the mountain streams. Subsequent to their destruction, the irrigators, unable to affect the costs of repairs, turned successfully to dry farming methods. By 1885, irrigation in the Canadian West had ceased to exist.

Renewed interest in irrigation was created by William Pearce. As the senior officer of the Department of the Interior in the Northwest Territories, Pearce considered it his duty to suggest and promote any enterprise that had prospects of being of benefit to the people in the Territories. One such enterprise he believed to be irrigation. He <sup>saw</sup> ~~was~~ irrigation as a practical solution to the problem of reclaiming large areas of semi-arid lands in the far West.

During the forty-five years that Pearce lived in Calgary, he constantly advocated irrigation farming principles. He was not an innovator, nor did he consider that his ideas concerning irrigation were in any way unique. He had first



studied the irrigation projects in the American West, and later in 1910, he had examined irrigation projects throughout the world. His plans for the construction of the Northwest Saskatchewan Irrigation Project formulated in 1916, bear a marked resemblance to the gigantic irrigation schemes he had seen in operation in northern India. In every project, the artificial application of water to arid lands had resulted in superior crop yields. What he proposed was the adaptation of this successfully proven agricultural system to the semi-arid regions of the Canadian prairies.

At first his proposals were treated with indifference by the western farmers, but as the prairie drought entered its fifth year in 1890 the settlers became more willing to listen to proposals for irrigation schemes. His establishment of the Calgary Irrigation Company in 1893 had been an attempt to visibly demonstrate the advantages of irrigation farming to the skeptical public. The education of the westerners in the methods of irrigation was one of the many major contributions that Pearce made to irrigation in southern Alberta.

When he spoke, he spoke with the authority of the Federal Government behind him, and his ideas on western settlement commanded the respect due a senior Government official. The nature of his work brought him into close contact with powerful political and financial interests in eastern Canada. After he had broached the subject of irrigation in his annual report to the



Minister of the Interior in 1885, he seized every opportunity to discuss irrigation with these interests. It was through this contact that he was, in the early 1890's, able to convince the Government to recognize the need for irrigation in the Territories. In addition he was able to persuade the Directors of the Canadian Pacific Railway to embark on irrigation ventures through the promise of increased profits from the sale of lands due to the enhanced value of the soil. The creation of the C.P.R. Irrigation Block, east of Calgary, was due to his influence.

Pearce realized that there was more land in the Canadian West requiring irrigation than there was water to place on it. He recommended the suppression of the riparian rights to western water supplies in order to permit the Government to administer their usage for the benefit of the greatest number of people. This principle was embodied in the Northwest Irrigation Act of 1894 which Pearce had drafted at the request of the Minister of the Interior, T. M. Daly. The suppression of riparian water rights at this time, when settlement was sparse on the prairies, undoubtedly saved the Government from costly litigation that would have arisen had the attempt to suppress these rights occurred after the West had been densely settled. The Act also provided for a system of licensing for new irrigation works which was less costly than the previous method of seeking a charter of incorporation through a special act of Parliament prior to commencing the construction of irrigation works. The flood of applications for



stream diversion licenses that followed the passage of the Act bears witness to the value placed on it by western farmers.

In 1895, Pearce withdrew from active promotion of irrigation projects. He was requested to curtail his irrigation activities by the Department of the Interior, as a result of complications which arose over his involvement in the management of the Calgary Irrigation Company. The work of irrigation promotion was carried on by Ora Card and the Mormons who had settled on the Lethbridge Plains. Their irrigation projects had developed apart from, and at a later date than, Pearce's Calgary project. However, their overwhelming success with the St. Mary's River irrigation scheme overshadowed much of Pearce's earlier work. The opening of the St. Mary's project, in 1899, was widely publicized throughout Canada. The Galt financial interests, who owned much of the land within the proposed irrigated tract, mounted a publicity campaign across Canada in an effort to encourage a maximum sale of their lands. When the St. Mary's scheme commenced operations, entire editions of many Canadian newspapers were devoted to heralding the event. The publicity given the St. Mary's River scheme is no doubt responsible for the belief held to this day that it was the Mormons who brought irrigation to the Canadian West.

Pearce was the chief agent of Federal Government policy in the Canadian West. His official duties left him little time to devote to irrigation; however, it is unlikely that he could have



accomplished more than he did in the way of its promotion had he been able to fully expend his energies in that direction. His position with the Department of the Interior was vital to the success he achieved in advancing irrigation principles. Initially the Government was reluctant to recognize the need for irrigation in the far West, as it was feared that subsequent to the acknowledgment of the existence of arid regions in the West there would be a decline in land sales. On the contrary, the Government was advertising western lands as being every bit as fertile as the farm lands in the East. Impatient with the slowness of the Government to respond to this need, Pearce felt impelled to take action himself, and he organized the Calgary Irrigation Company in 1893. In the early 1890's, when he had persuaded the Government to change its attitude concerning western irrigation, Pearce was asked to draft the Northwest Irrigation Act of 1894, governing its operations.

Irrigation of the arid lands in the far West was inevitable. Sooner or later the techniques of this successful agricultural system, which could bring forth crops in drought stricken areas, would have been adopted in Canada. Pearce was responsible for its early introduction and for formulating the framework for its future development. This development took place when the western prairies were thinly settled, permitting the suppression of riparian rights to western waters without costly litigation from vested interests. In addition, the early



recognition of a need for irrigation was a factor in the creation of the Canadian Pacific Railway's irrigation blocks at a time when there was enough land east of Calgary for the Railway's requirements. Had Pearce not had the contacts afforded him through his Government office, he would not have been able to convince political and financial interests in the East of the necessity for quick action.

Irrigation in the Canadian West was an extension of farming practices already in existence on the Great Central Plains region of the North American Continent. Irrigation farming methods in southern Alberta were adopted from the more advanced techniques in use in the American West. The American influence on Canadian irrigation was also noticeable in Canadian irrigation legislation. The Northwest Irrigation Act of 1894, which formed the framework for future irrigation development, was drafted after a thorough study of legislation relating to irrigation in the western states.

Information concerning American irrigation procedures was readily made available to the Canadian Delegates at the International Irrigation Congress annual conventions.<sup>1</sup> It was at these conventions in 1894 and 1895 that Pearce and Dennis first became acquainted with leading American irrigationists, such as George G. Anderson of Denver, Colorado, who was later to carry out an independent survey of the Bow River Project for the Canadian Pacific Railway. A great deal of correspondence between fellow

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<sup>1</sup>See above page 52.



irrigators stemmed from the friendships cemented at these annual conferences.

The American influence on irrigation farming methods in Canada was almost complete. However, in one respect the Canadian system was markedly different from that of the United States, despite the continental dominance of the American system. In Canada, the Federal Government took upon itself the responsibility of carrying out comprehensive surveys in the far West to define possible irrigable lands. The response of the Government to the needs of the Canadian irrigators was heartily endorsed by the International Irrigation Congress.<sup>2</sup> The future demands by American irrigationists for Federal Government aid were a direct result of the practice of the Canadian Government, which had been explained to them in a paper delivered by Pearce and Dennis at the International Irrigation Congress convention in Albuquerque in 1895.<sup>3</sup> As such, this is a rare, if not unique, instance of Canadian influence on the development of the American West.

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<sup>2</sup>Interior Report, 1895, Report of the Deputy Minister, xix.

<sup>3</sup>W.P.P., A paper on Canadian irrigation legislation read by Pearce to the International Irrigation Congress, Albuquerque, New Mexico, 1895, File No. 13.D.4; A paper on Canadian irrigation surveys read by J. S. Dennis to the International Irrigation Congress, Albuquerque, New Mexico, 1895, File No. 13.D.4.



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A very faint, light blue map of the United States is visible in the background, showing the outlines of the states and major geographical features like the Great Lakes and the Gulf of Mexico.

# M A P S

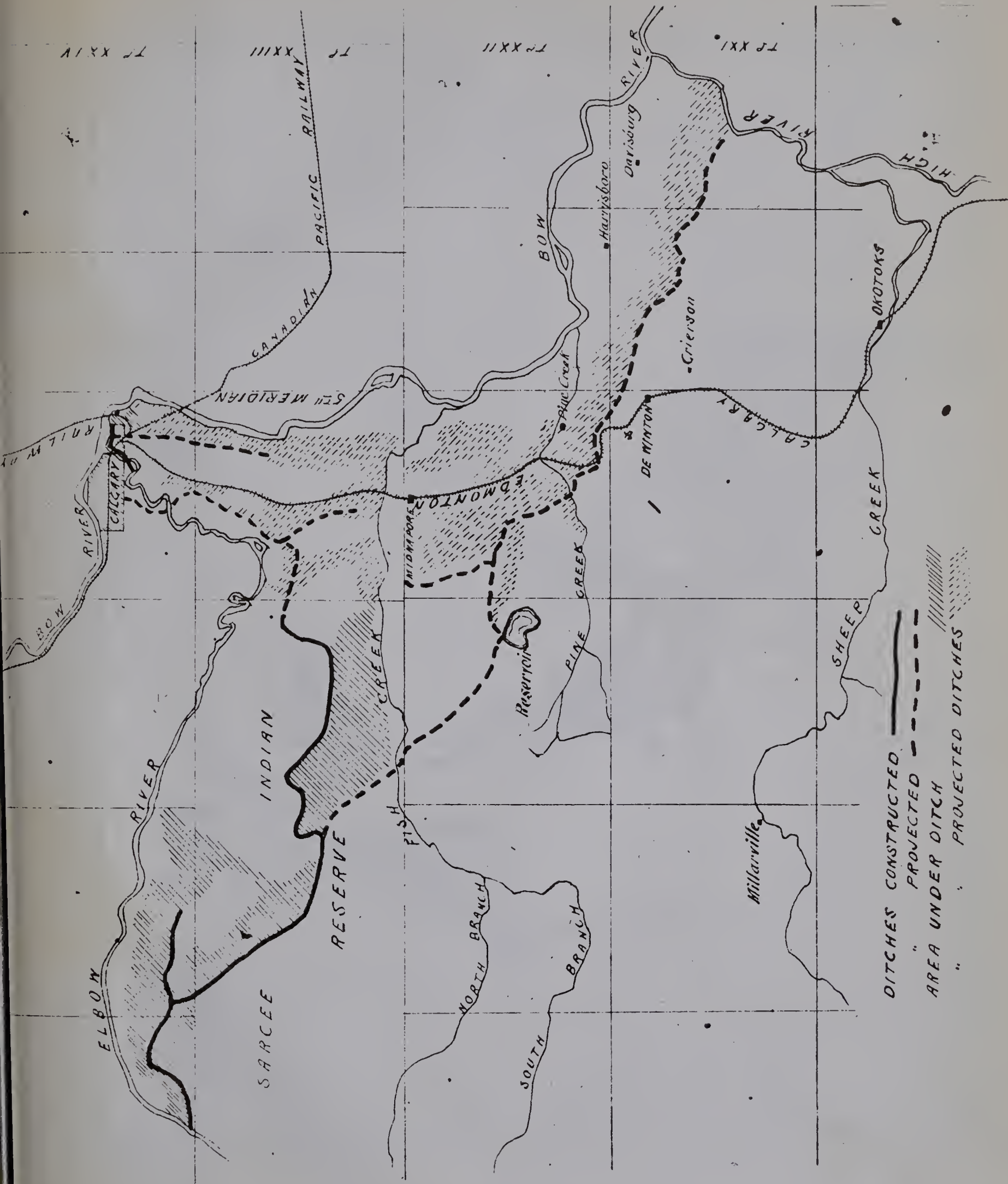




DITCH ROUTES  
IN RED

MAP I. IRRIGATION CANALS TO THE PEARCE ESTATE (W.P.P., MAP COLLECTION).





MAP II. THE CALGARY IRRIGATION COMPANY (W.P.P., MAP COLLECTION).





TABLE OF IRRIGABLE AREAS

No.	Name	Irrigable Area
1	Saskatoon	302,745 AC
2	Regina	43,025 "
3	Edmonton	80,000 "
4	Calgary	100,000 "
5	Winnipeg	50,000 "
6	Brandon	40,000 "
7	Saskatoon	73,150 "
8	Edmonton	200,000 "
Total		1,410,920 "

GENERAL MAP OF  
NORTH SASKATCHEWAN  
DIVERSION PROJECT  
RESERVOIRS, MAIN CANALS, IRRIGABLE TRACTS  
AND POSSIBLE EXTENSIONS

DEPARTMENT OF THE INTERIOR, CANADA  
RECLAMATION SERVICE  
IRRIGATION DIVISION - CALGARY

LEGEND  
Proposed Reservoirs  
Proposed Canal Extensions  
Irrigable Tracts  
Area Commanded under Proposed Canal Extensions  
Boundaries of Conventional Systems

Scale 1:100,000





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